BULLETIN

MADRAS DEVELOPMENT SEMINAR SERIES

VOLUME VII No. 5 & 6 SPECIAL NUMBER MAY-JUNE 1977

74, SECOND MAIN ROAD, GANDHINAGAR,
ADYAR, MADRAS-600 020.

MONTHLY BULLETIN

Vol. VII No. 5 & 6

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EDITORIAL—SOME HIGHLIGHTS

I General Economic Scene

State:

State Budget for 1977-78: Presenting the State Budget for 1977–78 to the Lok Sabha at the end of March, because of the mid March Lok Sabha election and the formation of the new Union government, the Finance Minister stated that at the March session, the government was seeking only a vote on account for five months. The vote on account was approved. The Budget estimates presented for 1977–78 shows a revenue deficit of Rs. 9.9 crores (revenue receipts Rs. 635.91 crores and revenue expenditures Rs. 645.81 crores) and capital expenditure is estimated at Rs. 162.69 crores and the Plan outlay as noted in Vol VII p 135 at Rs. 260 crores (power Rs. 95 crores, irrigation Rs. 25 crores, Agriculture Rs. 30 crores, Industry Rs. 14 crores, Transport and Communications Rs. 24 crores, Water Supply and Sewage Rs. 25 crores, Education Rs. 13 crores, Housing and Urban Development Rs. 16 crores and other Social and Economic Services Rs. 18 crores). The 1976–77 revised budget shows a revenue deficit of Rs. 12.78 crores against the anticipated deficit of Rs. 5.32 crores (see Vol VI p 189) mainly due to expenditure on drought and flood relief which amounted to Rs. 31.62 crores, covered to the extent of Rs. 18.75 crores by way of advance of plan assistance from the Union government. For the year 1976–77 against the plan outlay of Rs. 201 crores, Plan expenditure was Rs. 227 crores. The overall effect of Revenue, capital and loan accounts will result in a minus closing cash balance of Rs. 13.92 crores which the government will meet by economics, better collection of taxes, buoyancy of tax receipts and improved financial performance of public sector corporations. The budget as presented is a sound estimate with accent on power and agriculture. The economy measures proposed must be implemented. Also the Union government will have to transform the drought and flood relief Plan advances as outright grants, so that the economy can grow in a normal manner.

Other States Budgets for 1977-78: The budgets for 1977–78 of all the States were similarly introduced in late March in the State Assemblies because of the elections and all that could be done was to take a vote on account and postpone debate of the full budget proposals to a later session in April/May. Most of the States reverted to the deficit budget technique of the pre 1972 period adding upto a combined deficit of Rs. 350 crores. This total breaks down into deficits presented by the following States: Andhra Pradesh Rs. 52.50 crores, Bihar Rs. 3.79 crores, Gujarat Rs. 42.18 crores, Haryana Rs. 20.16 crores, Himachal Pradesh Rs. 4.02 crores, Jammu and Kashmir Rs. one crore, Karnataka Rs. 32.15 crores, Madhya Pradesh Rs. 9.91 crores, Punjab Rs. 28.62 crores, Uttar Pradesh Rs. 65.57 crores and Rajasthan Rs. 33.51 crores. 5 States present a surplus budget amounting to Rs. 19 crores—West Bengal Rs. 4.01 crores. Orissa with a small surplus, Kerala Rs. 2 crores, Maharashtra Rs. 12.86 crores and Goa also with a small surplus. Only 3 States—Maharashtra (Rs. 29 crores), Orissa (Rs. 7.9 crores) and Rajasthan (Rs. 3 crores) proposed through new taxes to raise Rs. 40 crores. Thus the overall deficits of 17 States will be Rs. 250 crores. Most States show no effort to raise additional resources, as they did in 1974–75 when they raised Rs. 358 crores, in 1975-76 Rs. 117 crores and in 1976–77 Rs. 112 crores. The resources position of some States has been worsened by a number of pre poll concessions which add upto a Rs. 200 crores loss to the State's revenues, the need to show a deficit to the Seventh Finance Commission which will being work this year and this year also being an election year for most State Assemblies. In this context of deficit Budgets, the conclusion of the RBI study on State Budgets published in its December Bulletin is apposite. State governments deficits, it calculates, for 1976–77 will amont to Rs. 39.4 crores and so it urgently recommends cutting non-plan expenditures and mobilising more resources. The same prescription applies to the 1976–77 estimates for the States. The RBI study shows that Sales Tax is the large revenue source for the State, increasing from 48.2 per cent in 1968–69 to 56 per cent of the total tax receipts in 1976–77, followed by State excise which contributes 12 per cent. For all States, sales taxes provide Rs. 21.65 crores, State excise Rs. 449.31 crores, land revenue Rs. 199.67 crores 15.2 per cent), stamps and registration Rs. 254.34 crores (6.6 per cent) and vehicles tax Rs. 226.22 crores. Of the State's total revenue of Rs. 8,369 crores, Rs. 3,838 crores came from their own tax revenues (with Tamil Nadu being the highest at 59.8 per cent) and the net transfers from the Union government financing 17.2 pe: cent of their budgets.

Relief and Prices: The flood relief measures are winding down and the drought relief measures were confined to the few blocks in the State referred to in last issue p. 208. On the price front, prices continued their upward trend. In early March the government announced the arrival of 3,500 tonnes of groundnut oil from Gujarat, with 3,000 tonnes being distributed through fair price shops among card holders. Medium variety rice price has risen from Rs. 110 to Rs. 120–135 per quintal. In Thanjavur and Tirunelveli, boiled rice was selling at Rs. 1.80 per kilo, coriander at Rs. 6.50 per kilo, gingelly oil at Rs. 9.89 and groundnut oil at Rs. 8.62 per kilo. In this context, the save Grain Campaign launched by the Union government and operating in five districts in this State—

Thanjavur, Tiruchirapalli, South Arcot, North Arcot and Chingleput—is timely, as it is estimated to have saved by the end of April, 20 lakhs worth of grains from the ravages of insects, rodents and fungus and by adopting scientific methods of storage. In this harvest season, the primary infestations by insects are carried to the godowns along with the bulk of the grains. This is also time when the rodent menace is at its height. Under this campaign, 20 model and 105 medium contact villages in the State have been selected where (a) demonstration on rodent control in houses and fields, grain fumigation, prophylactic treatment, improved storage structures and use of metal bins are popularised, and (b) a 3 week training course for 51 farm youth on various means of saving grain, demonstrating the methods in surrounding villages were undertaken. Also farmers, traders, extension workers were trained in methods of scientific storage of foodgrains. 18 Pusa bins designed by IARI have been at low cost erected for small farmers. Also metal bins are being manufactured by Tamil Nadu and Karnataka Agro-Industries Corporation and supplied to farmers on a deferred loan basis. For this programme the State government has received a loan of Rs. 8 lakhs from the Union government and with further loans from ARDC and banks private parties are being encouraged to build godowns to increase the minimum holding capacity of godowns to 2,500 tonnes in rural and 5,000 tonnes in urban areas in time for May, June and July when storage will be at its peak.

Power : The power situation in the State in March was similar to that reported in the last issue (p 209) for February, with the 20 per cent cut due to the rains in 1976 filling only 40 per cent of the reservoirs. The power reduction was in March kept down to 20 per cent because of good performance of the thermal stations, including Neyveli. Ennore for instance generated 1,000 mu in 1976 compared to 800 mu in 1975. In April, however, the power situation in the State worsened. Two of the five Ennore units went out of order in late March and one was recommissioned in late April. As a result, there was faster depletion of the hydel storage and a gap of 2.5 million units per day arises. From April 1, the cut on H. T. consumers was increasing to 40 per cent and from May 1 to 50 per cent. The Union government is helping the State obtain additional power. In Mid April Kerala agreed to give Tamil Nadu 15 million units for 60 days, out of which the cement factories are getting 2.5 lakh units daily and the resulting 2,000 tonnes of extra cement a day produced is being shared equally between the 2 States. For the future, three groups of action are being taken to improve our power potential on which the State's agricultural production and manufacturing industry is dependent. The outlay on power was increased from Rs. 38 crores in 1975-76 to Rs. 70 crores in 1976-77 and Rs. 92 crores has been put in the Plan for 1977-78. Second, transmission losses have been reduced from 23 per cent in 1973-74 to 18.5 per cent in 1976-77 and a system of inspection and proper designing and installation of equipment are being undertaken to reduce losses further. It is estimated that the loss of one MW of power through outages results in a monetary loss of Rs. 5 crores. Both transmission losses and outage losses should be reduced and the surplus manpower in the Tamil Nadu Electricity Board used to their fullest abilities so that the gap between installed capacity and generation can be reduced. The third action is the request of the State government to the Union government to permit import and installation of 3 gas

turbines with a total capacity of 150 MW at a cost of Rs. 60 crores. This will enable increases of the State's power supply within a short period of time. LIC sanctioned in March a new loan of Rs. 5.74 crores to the Tamil Nadu Electricity Board to be used in the Tuticorin Thermal Plant, Kunda IV stage extension, and the Suruliyar hydro electric scheme—which makes the total LIC loan to the State Electricity Board amount to Rs. 45.96 crores for purposes of generation and distribution.

For the country as a whole, in March power generation increased by 3.5 million kwh per day compared to February's 2.4 million kwh per day. But power shortage still continued, falling marginally from16.7 gwh in February to 16.5 gwh in March. In the Northern region power supply was 68.38 gwh against the demand of 71.3 gwh per day. In the Southern region the gap widened, the demand being 82.25 gwh to 90.5 gwh per day, while supply was the same as in February at 60 gwh per day. In the Western region the supply was 73 gwh while the demand was 75–85 gwh. In the Eastern region the demand increased to 42.60 gwh per day and the supply 41.80 gwh per day. For 1976–77, the government reports an 11.6 per cent increase in power generation, the total additional new power being 1,712 MW and for 1977–78 is estimated at 2,596 MW. In April Andhra Pradesh had to impose a cut of 30 per cent on all HT consumers resulting in severe production reductions in several public and private sector units, such as BHPV, Caltex, Coromandel Fertilisers, FAC and Hindustan Polymers. In April also the tenth and last generator at Sharavathi was commissioned in Karnataka, with no immediate relief because of the poor storage at the Linganamakki reservoir and no power cut reliefs. By September a direct power line between Kerala and Karnataka is expected to be completed. (Till then Kerala power for Karnataka is supplied via Tamil Nadu). The Union government sanctioned loans of Rs. 5.56 crores in March to 6 schemes—to DVC, Kerala, Maharashtra, Rajasthan, Uttar Pradesh, Himachal Pradesh and Manipur for constructing centrally sponsored inter-state power transmission lines. REC also sanctioned loans of Rs. 20.67 crores for 65 projects in 16 States, covering 4,000 villages, energising 20,000 pumpsets, 2,000 small industries, 1,000 domestic and commercial connections and 12,000 street lights. This included 15 mini farm schemes in the 6 States and 8 electrification projects for the backward areas of Meghalaya and Assam. The Planning Commission cleared in March the superthermal power station at Singrauli as a scheme of the National Thermal Power Corporation (see Vol VII p 137). The Union Agricultural Ministry estimates that out of the country's 9,60,863 million tonnes of wet dung per annum, 1,04,507 billion kwh of electricity per year can be produced. If even 25 per cent of this is done, it will relieve the power shortage in the country.

Rural Bank: The State's first Rural Bank—Pandyan Grama Bank—sponsored by IOB to meet the credit needs of small and marginal farmers, rural artisans and landless labourers was established in March in Sattur. It will provide loans for production and for education and medical expenses in deserving cases, and finance co-operative and private agencies. It will have a net work of branches in the district. On the opening day, 78 persons in these categories were given loans amounting to Rs. 1.17 lakhs, including Rs. 39,000 under DPAP to agriculturists and small business men.

Water: The State government has prepared a Rs. 150 crore scheme for carrying water from the Krishna to Madras to meet the city water supply problem and has submitted the scheme to the Union goverment. The scheme will obtain the water from the Somasila project in the Nellore district (see Vol VI p 254). For the present a token provision has been made in the PWD budget. Up to the end of March, the government announced that it had spent Rs. 66 crores to provide drinking water to 165 towns and town panchayats covering 70 per cent of those living in towns and town panchayats,— around one crore persons. It has also decided to launch from 1977–78 a comprehensive water scheme needed by 16,000 habitations which a survey carried out by 3,000 gram sevaks had shown to be lacking in drinking water. In March, a scheme covering 57 villages in Tirunelveli, Tiruchi, South Arcot, Salem, Ramanathapuram, Pudukottai, North Arcot, Madurai, Kanyakumari, Dharmapuri and Coimbatore Districts at a cost of Rs. 25.15 lakhs was launched. The improvement of the existing water supply scheme at sathankulam town panchayat at a cost of Rs. 2.22 lakhs, a scheme covering 31 villages in the Thoppampatti block of Palani district at a cost of Rs. 18.6 lakhs and in Oddanchathram at a cost of Rs. 23 lakhs were also inaugurated. The government sanctioned a loan of Rs. 8.14 lakhs to the Coimbatore Municipality for its drainage scheme. On the Cauvery waters issue, only an interim arrangement exists, with negotiations still going on betwen the 3 States.

Housing : The MMDA urban development project to which World Bank aid of Rs. 47 crores is to be given (see Vol VII p 140 and last issue p 211), will emphasise low cost solutions in the area of housing, water supply, transport and communications. The Bank approved project gives priority to 13,500 plots under the sites and services schemes, improving Infrastructural facilities to 85 slums with their 23,000 households, generation of employment for 4,000 persons in the small scale sector and 5,000 persons in cottage industries. In March and aerial survey of city slums was completed and on that basis the slum improvement schemes are being undertaken. These include grant of free-hold titles to slum dwellers and all schemes to improve facilities. Also it is expected that the development of the sites and services programmes and the grant of land titles will stabilise the slum population and prevent its increase. The needs of pedestrians and cyclists who together constituted 40 per cent of the road population are to be met and 285 overaged buses of the Pallavan Transport Corporation are being replaced. The Madras Corporation under the EHO–UNDP–TWAD project started in March a leak detection water waste survey covering West Mambalam, Choolai Medu, Kodambakkam, Vadapalani and Ashok Nagar areas on the basis of which the water supply scheme is being re-organised. The Slum Clearance Board has included Rs. 478 lakhs in its 1977–78 budget to build new tenements to rehabilitate 6,000 families. A further Rs. 330 lakhs are to be spent on slum improvement. The World Bank assistance of Rs. 6 crores is to be spent in 3 years 1977–80 for the benefit of 85 slums, with Rs. 140 lakhs being spent in 1977–78 on 30 slums. The World Bank team has proposed a Rs. 1.69 crore programme to provide supplementary nutrition to 17,000 children and 7,000 mothers in the slums. HUDCO is providing Rs. 336.49 lakhs, of which Rs. 214 lakhs will be used for constructing 2,600 tenements. Also in March, the President made permanent the Tamil Nadu Requi–

sitioning and Acquisition of Immovable Property Act 1977 under which the terms of the compensation of the requisitioned property is fixed at the market price of the property, and the requisitioned property must be released unless the property is acquired within 10 years, Again in March, the State government extended to May 31 the last date for declining vacant lands and issued guidelines to the concerned authorities for the sanction of plans for the construction of residential buildings on vacant lands in excess of the ceiling limits in the State's various urban agglomerations. The guidelines cover cases where the excess over the ceiling is 50 sq. metres or more, where under certain conditions, the building on the vacant land is allowed. But the guidelines are complex and restrictive, and it is doubtful if building construction will pick up again in the State on the basis of these guidelines. The government expert committee has recommended against setting up a commercial complex at Ayodyakuppam on the marina and in place has suggested building a 5 storyed multi-purpose building for holding seminars, cultural functions and exhibitions.

Communication: The Railway Board reports that the railways which in the first and second Plans catered to 90 per cent of passenger traffic, at present carries only 65 per cent of the traffic. On the other hand its low rated traffic consisting of agricultural products and raw materials has increased by over 80 per cent while high yielding traffic has declined to 19 per cent during the period. In April a Tirupathi-Tiruchi Express has been started and for the summer 40 specials are to be run from Madras to Trivandrum. The telecommunications Department reports that 8,000 telephone connections were given during 1976–77, wiping out its waiting list, making a total of one lakh telephones for the Madras region. Pudukottai, Nagercoil and Dharmapuri are being provided with a no delay service from March 4. STD services between Madurai and Coimbatore, and Salem and Ooty have been provided. Out of 374 block headquarters, 362 have been provided with public telephones. Madras Post acquired a sixth 22½ tonnes tug, which will enable the port to handle 1,00,000 DWT vessels under all conditions of weather.

Kudiyiruppu Act: The State government proposes to enforce the Tamil Nadu occupants of Kudiyiruppa Act in the villages and sub-taluks covered by plantations and in the Nilgiris district for the benefit of non-plantation agriculturalists and non-plantation agricultural labourers. The Act has been brought into force in the whole of Thanjavur district but has not been brought into force in Madras and Nilgiris district and in municipalities and townships in other districts. This decision to extend its coverage to the Nilgiris and plantation areas is a start to cover this gap.

National :

Union Budget for 1977–78: As in the case of the State Budget, the Finance Minister presented at the end of March an interim budget for 1977–78. It was an interim budget in the sense that the Finance Minister pointed out that it was proposed on the basis of the directions and decisions of the previous government (with Mr. C. Subramaniam as the then Finance Minister), and so would be revised in the light of the thinking and priorities of the new Janata government. It was also interim in the sense that because of the lateness (the end of the financial year), the government was

asking the Lok Sabha a vote on account for five months and will be presenting the full final budget in May. The Lok Sabha and later the Rajya Sabha approved the vote on account. The budget shows a deficit of Rs. 632 crores, the over all deficit being Rs. 1,432 crores against which Rs. 800 crores is to be borrowed from foreign exchange reserves. The revised estimates placed the deficit for 1976–77 at Rs. 425 crores against the budgetted deficit of Rs. 328 crores (see Vol VI p 194). The interim budget's revenue estimate was Rs. 14,910 crores as against the 1976–77 revised revenue estimate of Rs. 13,759 crores. The expenditure for 1977–78 was Rs. 15,542 crores against the revised 1976–77 expenditure of Rs. 14,184 crores. This total estimated expenditure for 1977–78 of Rs. 15,542 crores comprises Rs. 8,920 crores as development outlay, defence outlay of Rs. 2,808 crores interest payments Rs. 1,800 crores, statutory and other transfers to State governments of Rs. 781 crores and other expenditures of Rs. 1,483 crores, Development outlay comprises Rs. 5,508 crores on economic services, Rs. 867 crores on community and social services, Rs. 2,536 crores on assistance to State governments for development purposes. Resources transfers to State governments include Rs. 1,788 crores on the State's share of taxes and duties, Rs. 2,536 crores for development purposes and Rs. 781 crores as statutory and other grants and loans. The revenues for 1977–78 from income tax—corporate and individual—are estimated at Rs. 2,258 crores, an increase of Rs. 180 crores over the 1976–77 realised tax revenue. Union excise duties will provide Rs. 4,543 crores against the revised 1976–77 Rs. 4,093 crores. Customs duties will net Rs. 1,586.50 crores against the revised Rs. 1976–77 estimate of Rs. 1,490.45 crores. The Plan outlay for the fourth year of the Fifth Plan is Rs. 9,953 crores, compared to Rs. 7,852 crores for 1976–77. The central sector of the Plan will be Rs. 5,053 crores compared to 1976–77's Rs. 4,096 crores. The sectoral break down of the central plan outlay for 1977-78 is industry and minerals Rs. 2,412.95 crores, petroleum Rs. 710 crores, steel Rs. 576 crores including Rs. 13 crores for salem, Rs. 242 for coal including Rs. 163 crores for Coal India and Rs. 37 crores for Neyveli, agricultural Rs. 495 crores, water and power Rs. 246 crores, transport and communication Rs. 702 crores and social and community service Rs. 595 crores. The budget computes that out of every tax rupee collected by the government in 1977–78, 22 paise will come from excise, 10 paise from customs, 8 paise from corporation tax and 2 paise from income tax. On April 6, the Jha Committee (see Vol VII p 108) presented its interim report to the government covering major aspects of the direct taxes which provide 80 per cent of the tax revenue in the budget and its view on adopting some form of VAT. It is difficult and somewhat useless to analyse this interim budget because (a) it is going to be changed as stated by the new Finance Minister, (b) the deficit sector is to be reduced as the new government is against deficit financing and (c) all ministries and public sector undertakings have been asked not to take up fresh commitments or new schemes, and to explore the possibility of rescheduling existing schemes and observe the rule of austerity and economy in operations. The direction in which the budget and the Fifth Plan might be modified is set forth in the President's address to the Lok Sabha which on behalf of the Janata government (1) pledged to remove destitution in a time frame of 10 years, (2) pay greater attention to the needs of the

rural sector, (3) prevent growing imbalances in the employment sector and (4) step up economic development in various directions. When the final fourth year of the Fifth Plan and Budget are presented in May, it will be possible to comment on them.

Railway Budget for 1977–78: The railway Budget for 1977–78 presented at the end of March to the Lok Sabha also was the basis for a request for a vote on account for 4 months, which the Lok Sabha granted. The budget estimated the gross traffic receipts at Rs. 2,091.44 crores (up by Rs. 104 crores in 1976–77), based on 6 per cent growth in passengers and on originating revenue earning freight of 217 million tonnes (11 million tonnes more than 1976-77). Expenses are placed at Rs. 1,635.75 crores. Railway facilities in the backward region of Konkan, Orissa, Madhya Pradesh and North East are to be given priority. The Plan outlay will be Rs. 501 crores including Rs. 10 crores for metro–politan transport projects for Bombay, Calcutta, Delhi and Madras. The revised budget for 1976–77 shows a net surplus of Rs. 35.67 crores (against the budget–ted of surplus Rs. 8.98 crores) (see Vol VI p 196) and that for 1977–78 shows a surplus of Rs. 26.45 crores. The budget provides for a new broad guage line from Tirunelveli To Trivandrum via Nagercoil, a branch line from Nagercoil to Kanya–kumari (Rs. 2.75 crores). Madras Trivellore electrification (Rs. 2.67 crores), Madras–Gudur electrification (Rs. 2.20 crores): doubling of track between Jollar–pettai and Mulanur (Rs. 30 lakhs). In addition, it provides for techno–economic feasibility studies for (1) mass rapid transit system for Madras, (2) opti–misation of existing rail facilities and study of dispersal lines in Madras— Rs. 150 lakhs. The budget is a good development budget which shows the railways are in good economic shape and contributing to the country's develop–ment. In this case there will not be much change in the final budget to be presented in May.

Fifth Plan and Approach to Sixth Plan: With the completion of Lok Sabha elections in March and the instal–lation of the new government led by the Janata Party of the Union government level, the preparations for the fourth year of the Fifth Plan made by the previous government as analysed in the last two issues of the Bulletin (see Vol VII p 141 and 212) and recounted in the interim budget, as noted earlier, might undergo changes particularly in eight of the elec–tion pledge of the party now forming the government to (a) bring down prices and (b) ensure every one the right to work. Also this would be a good opportunity to re–examine the total public sector outlay that had been proposed for the fourth year, namely Rs. 9,953 crores which in a smaller increase at 28 per cent over the increase of public sector outlay for the third year which was 31 per cent. If the price rise that has taken place during 1976–77 of over 12 per cent is taken into account, the proposed increa-se in real terms is even less. What is needed for the economy to resume its growth, keep down prices and increase employment is (a) a higher rate of investment and (b) more investment in industries producing goods of mass consumption and using labour intensive methods to increase employment oppor–tunities. From this point of view the increa-sed provision for construction activities, road building and social forestry are steps in the right directions, which will have to be further expanded and strengthened. However, the Prime Minister's statements in April that there will be no deficit

financing, might mean a deep 10 per cent cut in the Plan outlay amounting to as much as Rs. 1,000/– crores. Also the time is now well past when public and technical discussions should have started on the Sixth Plan. The approach and the frame for the Sixth Plan should now be the subject of consultation between the economists, business and labour leaders and the Planning Commission members. In the meanwhile, the Commission sanctioned in March Rs. 8 lakhs for geological investigation in Andaman and Nicobar islands to identify natural gas and mineral resources reserves. The Commission also at the end of February finalised the tribal development areas sub–plans for the Fifth Plan of Rs. 1,440 crores, of which Rs. 975 crores are from the State Plans and Rs. 190 crores from the Central assistance. The programme will cover all areas with more than 50 per cent tribal concentration and so extend to 70 per cent of the total tribal population of the country.

Prices and Central Loans: The official index number of wholesale prices for February for the week ending February 26 compared to the previous month registered a small increase of 0.3 per cent at 182.9 but for the month registered a 4 point rise which nearly a high 2.3 per cent for the month. Pulses prices increased by 5.9 per cent in February and declined by 2 per cent in March, oil seeds increased by 8.4 per cent in February and declined by 9.7 per cent in March, fibres increased by 3.7 per cent, edible oils by 8.9 per cent and sugar by 5.9 per cent. For the month of March there was 0.8 per cent decline at 181.5 for the week ending March 26. Only fertilisers prices declined by 3.9 per cent, other articles remaining stationary or registering a small 0.1 per cent decline for the entire month of March. The retail price index for Greater Bombay for February registered a similar 0.5 per cent price rise in February and 0.6 per cent in March so that for the 12 months April 1976 to March 1977, the rise was 12 per cent against a fall of 4.1 per cent during previous year. Because of the foodgrain stock and market arrivals in February, foodgrain prices fell by 1.7 per cent over that of January. The price of pulses however shot up by 17 per cent in February compared to January and about 30 percent over the year as a whole. Oil and fats rose by 6.1 per cent during February and 57.4 per cent over the year. Vegetables rose by 0.9 per cent during the month but by 41.6 per cent during the year. The hopes of price stability seem now rather a distant possibility. In fact retail prices have been rising steadily in February, March and April prices of some goods have registered a 5 to 25 per cent rise. There are non–economic causes for this price spurt, such as the lifting of the emergency, the leeway given by election and elections contributions. The economic factors include the increased money supply for 1976–77 amounting to 18.8 per cent compared to 10.4 per cent in 1975–76, due to increase in the net foreign exchange assets. The government is extremely disturbed at this inflationary trend and has called on industry and trade to cut back prices and has set up machinery in the Ministry of Commerce to monitor prices and increase the supply basic goods. The government has called for particulars of import licenses issued to edible oil importers following reports of malpractices. It is reported that against Rs. 500 crores of import licenses issued by the previous government, actual imports by the end of April were only Rs.40 to 50 crores. International oil prices have jumped from $ 480 per tonne in January to $ 765 on April 21 for rape seed oil, from $ 505 to $ 789 for soyabean oil, $ 450 to $ 630 for palm oil and $ 580 to $ 870 for refined rape seed oil. Hence importers who

brought oil in January abroad, sold it at the higher prices in the same countries. The landed price of imported oil has shot up from Rs. 4,500 per tonne in January to Rs. 7,000 per tonne in April. Hence there is need for government intervention to ensure distribution at cost or subsidised prices. The decision of RBI to continue its strict credit policy was relaxed during March probably under instruction of the previous government because of the exigencies of the election. Credit to the commercial sector was made more liberal and at March 31 stood at Rs. 2,747 crores for the commercial sector which represents an increase of 21 per cent. It is now expected that with the completion of elections and in accordance with its declared policy, the new government will turn seriously to the task of containing prices. The Reserve Bank decided in April to impound 10 per cent of the time and demand liabilities of the banks to regulate their loans. More restrictions are in the offing. The Union government decided in March to create further tranches of 2 outstanding loans for Rs. 50 crores and Rs. 35 crores to be taken up initially by RBI and made available to investors at prices that will be notified from time to time.

Economy: There are signs of revival of recessionary trends in the economy. The starting point here is that the foodgrains production for the year (1976–77) is likely to show a decline of 10 million tonnes (7 million tonnes less from kharif and 3 million tonnes less from rabi), resulting in Rs. 10 crores loss of dispensable income with the rural and farming majority. On the other hand the serious shortfall in the production of cotton and edible oils along with the money in the hands of the public is pushing prices up as noted in the previous section. In fact the full effect on prices will be seen only in future months, which will also see the results of the various "gifts" and concessions made by the State government to attract voters, amounting to Rs. 200 crores plus election campaign expenses. Industrial growth for the year 1976–77 is likely to be 10 per cent as noted in Vol VII pp 143–144. In this connection an official 10 year survey of the country's industrial growth shows a clear shift in production in favour of capital and basic goods which during 1960–74 have increased by 166 per cent and 155 per cent respectively compared to the increase of 64 per cent recorded in consumer goods production in the period—which also explains the price increases and inflationary pressure. Industrial production during this period has increased by 40 per cent. The number of factories increased from 48,456 in 1965 to 64,565 in 1970–71 but declined to 64,217 in 1974–75. Fixed capital rose from Rs.4,832 crores in 1965 to Rs.8,752 crores in 1970 and productive capital from Rs. 6,444 crores to Rs. 17,932 crores. Employment increased from 4.6 million to 6 million, output from Rs. 6,759 crores to Rs. 26,099 crores and value added from Rs. 1,883 crores to Rs. 6,080 crores. Industrial capacity has developed to encompass the entire spectrum of manufactured products. Against this encouraging review is the fact of recessionary and inflationary pressures in the economy. The usual prescription in which this Bulletin has also joined of using the comfortable balance of payments position to import needed capital goods and spares and build buffers as well as to increase investments and so stimulate growth overlooks two factors: (a) the increased inflow of foreign resources into the country mainly from Indians living abroad who send the funds under the Foreign Currency Non-Resident Account Schemes means these are not gifts like family remittances (which at last reporting in

1973-74 had, less than doubled from a mere Rs. 101.8 crores in 1967-68 to Rs. 191.3 crores) but are loans which have to be repaid; (b) these loans are being acquired by us on very hard terms under which Indians abroad can deposit and maintain their sums in dollar or other foreign currency, can withdraw the interest and capital at any moment without going through the RBI, are paid an interest of up to 10 per cent, and are not subject to income tax and the deposits not subject to wealth tax. This means that the increased inflow of Rs. 1,305 crores in 1976-77 reported by the previous finance minister are very hard loans on which the economy is paying a very heavy cost not paid to foreign capital or indigenous capital. Hence the use of this resource, if it is continued, should be very carefully scrutinised in the matter of using it as a means of stimulating the economy. One further issue needs to be considered. A recent RBI study has in this context called for evolving a new approach to the objective of debt equity ratio which can supplement risk capital more adequately, facilitate capital formation and promote accelerated industrialisation and growth. The study shows that for the period 1970-71 to 1974-75 the overall debt equity ratio for 16 industrial groups covering 1,650 companies was 0.41, with five industries being above this average— shipping 1:1, electricity 0.6:1, transport equipment 0.5:1, textiles 0.5:1 and aluminium 0.4:1. It points out that (a) there is need for a new approach under which there should be different debt equity ratios for different industry groups, depending on the type of technology used, the quantum of capital normally required, and the gestation lag, rather than a single norm for all industries, (b) industrial units in backward areas might be given a relaxation in the norms on the basis of the availability of risk capital, nature of the demand for its product, the promoters being technocrats, etc. (c) a more liberal approach can be taken on the debt side in order to accelerate industrialisation, which will also enable use of increased inflows of foreign resources, which a liberal debt equity ratio can provide with matching rupee resources and (d) above all the capacity of the corporate sector to absorb more debt without risking its financial viability. The other caution to be sounded is that the increased inflow of foreign resources is at a cost which the economy, which is struggling to service its foreign debt including its soft loan component, cannot really afford.

Public Sector Performance : For February, 16 Public sector units under the Department of Heavy Industry performed at 104 per cent of the month's target, at Rs. 86.72 crores against the target of Rs. 83.01 crores. Their cumulative production for 11 months from April 1976 was Rs.702.92 crores, being 91 per cent of the target of Rs.722.91 crores. The good performers were Tungabhadra Steel (195 per cent), Richardson and Cruddas (144 per cent), Bharat Pumps (144 per cent), HMT (128 per cent), Triveni structurals (124 per cent) Arthur Butler (117 per cent), Gresham and Cravan (113 per cent), BHEL (108 per cent) and Braithwaites (104 per cent). The Economic Times Research Bureau in a review points out that in 1975-76, 28 public sector units, each with total assets of over Rs.100 crores were twice as large as the top 20 business houses put together. Fifty public units account for 75.6 per cent of the total assets and 72.1 per cent of the total net sales of the 101 large corporate units in the country. They show all round growth in turnover, inventory, profitability, capacity utilisation, sales, employment, generation of internal

resources and foreign exchange earnings. A recent review attributes the good public sector units' performances to their efficient level of inventories, which in terms of output came down from 6.7 on March 31, 1968 to 3.9 on March 31, 1976. While inventories increased from Rs.746 crores to Rs.3,241 crores, output increased from Rs.1,337 crores to Rs.9,874 crores during this period. The total investments in the public sector was Rs. 8,973 crores, employment 1.5 million workers as at March 31, 1976. The inventories do not include foodgrain stocks of 17 million tonnes valued at Rs.2,500 crores. ECGC recorded its 20 year highest growth rate in volume of exports insured and guaranteed preshipment finance at Rs.2,978.90 crores in 1976 compared to Rs.2,120.83 crores in 1975. It covered 13 per cent of all 1976 exports which was a 2 per cent increase over 1975. It operated a special credit guarantee scheme for joint ventures in third world countries and established in April a Regional Advisory Committee for the Southern Zone. The railway reports that in January 1977, it achieved a record loading of 14.48 million tonnes of revenue earning traffic, during the first 10 months, April 1976 to January 1977, amounting to 173.07 million tonnes—the highest ever loaded by the Railways.

National Production Front:

Steel: Total output of steel by the end of February amounted to 6.1 million tonnes, and for the financial year is estimated at 7.8 million tonnes which is 19.8 per cent increase over that of last year and represents a capacity use of 91 per cent by February end. The monthly domestic steel sales are reported at 4.62 lakhs tonnes, the February sales increasing to 5.48 lakh tonnes and March sales to 5.88 lakh tonnes. Steel exports in February increased by 6 lakh tonnes and for the year was 2.43 million tonnes valued at Rs. 318 crores. Sail has decided to set up value engineering groups to evaluate and assess the possibility of cost reduction in steel production similar to efforts in other steel producing countries. Rourkela fulfilled its year's target of 1.05 million tonnes by the end of February, its cumulative production at February being 10.53 lakh tonnes and 11.7 lakh tonnes by the end of March representing 107 per cent capacity use. Bhilai operated at 102.7 per cent of capacity, TISCO at 103.3 per cent and Durgapur at 72.7 per cent. Bokaro completed its annual target for 1976–77 by mid March in producing 9 lakh tonnes of ingot steel and 7 lakh tonnes of saleable steel operating at 91.9 of capacity. SAIL exports of 2.43 million tonnes, including 10,000 tonnes of rimming steel, which till this year had been imported annually at the rate of 20,000 tonnes. SAIL also reports increase in March in domestic sales and exports amounting to 5.8 lakh tonnes, against a production of 4.8 lakh tonnes. The VI Plan draft of SAIL contains no new steel units, but provides for the expansion of Bhilai from 2.5 million tonnes to 4 million tonnes to be completed by the early years of the VI Plan (a task force to monitor the progress of this expansion programme, whose capital cost is Rs. 937 crores is already at work, for Bokaro's capacity is to be expanded from 1.7 million tonnes by the end of the Sixth Plan, Durgapur Alloy Steel Plant to be expanded from 60,000 tonnes to one lakh tonnes at a cost of 6 crores, the diversification and rationalisation of the product mix at TISCO and IISCO which will increase VI Plan steel production are now underway, and plans for Salem, Vishakapatnam and Vijayanagar are being finalised. As internal demand is estimated to be below production during the Sixth Plan, SAIL is planning a long term export programme

of 2–3 million tonnes per annum. It is attracting contracts from Arab countries for setting up steel plants, posting officials at Algeria, Tripoli and sending engineering teams to Kuwait and Saudi Arabia. One general comment that needs to be made is that for a country with 600 million people, the annual consumption of 6–7 million tonnes of steel is not even a minimal industrial and agricultural development requirement and exports out of this small annual production is a reflection of the stagnant nature of the economy and the lack of its meeting the minimum housing and other needs of the majority of its people. The government has decided to review the expansion plans and targets of the previous government (see Vol VI p 311), and for this purpose set up 6 working groups to examine various aspects of the steel industry. It has also decided to use Indian machinery for Bokaro's cold rolling mill complex in the place of Soviet imports.

Crude: The growth rate of the consumption of petroleum products for both 1975–76 and 1976–77 hes been reduced to less than 5 per cent, compared to the target of 9.6 per cent. This has saved Rs. 40 crores in the import bill which in 1976 was Rs. 1,200 crores. For 1977–78 the crude production target has been fixed at 11.31 million tonnes comprising 8.75 million tonnes from on-shore production (5.62 million tonnes ONGC and 3.13 million tonnes Oil India), 6 lakh tonnes from Rustan Crude in Iran and 2 to 2.5 million tonnes from Bombay High. In this connection it is to be hoped that the controversy over the terminal of the submarine pipeline between Maharashtra and Gujarat (see last issue p 216) will be soon resolved. Imports will continue at the 1976–77 level of 11 million tonnes, involving continued consumption of 22 million tonnes. For 1976–77 the domestic production was 9.47 million tonnes. The revised V Plan target is 14.18 million tonnes of indigenous production, which means 4 million tonnes from Bombay High in 1978–79, for which ONGC has been given a Plan outlay ot Rs.476 crores (up from Rs. 228 crores.) For 1977–78 imports, Iran will supply 3.5 million tonnes, Iraq 2 million tonnes, UAE one million tonnes and the Soviet Union one million tonnes, 5,00,000 tonnes from the Gulf Countries, 1.37 million tonnes from Exxon, and 2,50,000 tonnes from Egypt. As far as internal production is concerned, ONGC reports in March that oil has been struck for the first time in a self–flowing well in the Cauvery basin at Tittachary in the Karikal district at 1.5 tonnes a day. Further tests are being conducted to determine the exact production possible. The Cauvery basin identified for exploratory drilling extends from Pondicherry to Rameswaram over a stretch of 480 KM. ONGC is starting exploratory drilling in the gulf of Mannar about 15 KM South of Rameswaram and will be completing it in 50 days. The Commission has also released two locations in the Sarda Depression in UP. With the expansion of the Koyali refinery from the current 4.3 million tonnes to 7.3 million tonnes by early 1978, the one million tonne refinery at Bongaigaon to be completed in early 1978, and the 6 million tonne refinery at Mathura to be ready by 1980–81, the oil refining capacity of the country will be increased by 10 million tonnes, from the present 27.4 million tonnes refining capacity of 10 refineries. In 1976 the 10 refineries processed 26.76 million tonnes. All of them except the Digboi refinery of Assam Oil Company are in the public sector. In March, the talks between the government and the Burmah Oil Company for the takeover of Assam Oil and Oil India were concluded. As a result

Oil which is now producing 3.1 million tonnes will be assigned the same status as ONGC, for conducting onshore and offshore exploration in the eastern sector. It has completed ahead of schedule the laying of the 212 KM pipe-line to pump crude to the Bongaigaon refinery which will carry the one million tonnes of ONGC crude from Moran to the refinery. In addition OIL in collaboration with BOC is conducting field trials for the commercial application of "friction reducer chemical injection" which can increase the capacities of the existing crude oil pipe-lines by 22.3 per cent. Bombay High's production in April was 35,000 barrels per day which will be gradually increased to 80,000 barrels per day. During 1977-78 its production will be 2.50 million tonnes. The government has decided to commission the French oil major—CFP—for developing Bombay High in the shortest possible time. In order to attain the production rate of 80,000 barrels per day, CFP will provide Bombay High with technical assistance in reservoir assessment management and engineering over a period of 4 years, which will also enable ONGC to acquire and absorb the relevant technology, to be further used in other oil fields in Bassein and the continental shelf. An interesting forecast is that while the first 100 million tonnes of crude production in the Cauvery took 100 years as of this year, the next 100 million tonnes will be achieved within 7 years.

Coal and Minerals: Bharat Coking Coal, a subsidiary of Coal India, produced 20 million tonnes during 1976-77 with a good increase in productivity from 0.54 output per man shift to in April 1976 to 0.60 in March 1977. It has planned an expansion programme of 32 million tonnes by the end of the Sixth Plan and is constructing 2 washeries with a capacity of 2 million tonnes each at a cost of Rs. 33 crores to meet the demand of the steel industry. In January it achieved a record of 7.80 lakh tonnes of washed coal. In March the Visakapatnam zinc smelter was commissioned, increasing the zinc smelting capacity of the country from 38,000 tonnes to 95,000 tonnes. In January the zinc smelter at Debari in Rajasthan was expanded from 18,000 tonnes to 45,000 tonnes. The total production of zinc in 1976 was 26,876 tonnes, a 4.1 per cent increase over the production in 1975. In 1976 the total value of mineral production was Rs.1,228.4 crores, by 5 per cent over 1975. Of this mineral fuels accounted for Rs.967.9 crores or 80 per cent of the total.

Textiles and Cotton: An NPC study reports that due to inefficient and obsolete machinery, the textile industry is losing 184 million kg of cotton and 182 kg cloth every year. 60 per cent of the industry's installed capacity is 30 years old, and another 20 per cent is in weak and marginal units. Over the last 18 years the industry has not been able to use more than 73 per cent in the case of its spindles and 68 per cent in the case of its looms. This has made its product non-competetive internationally and inadequate for domestic needs. It has reduced its profitability and its capacity to generate reinvestible surpluses. Other problems faced by the industry are the uncertain supplies of cotton, large scale stock piling, inefficient management, flight of capital, dissipation of internal reserves and surpluses, heavy borrowing and a dividend policy unrelated to projects. The study forecasts a demand for cloth of between 16,060.5 million metres and 26,650.1 million metres by the end of the century. To meet the minimum estimate, if the industry operated at 90 per cent capacity, it will

not require additional spindles but it recommends expansion of weaving capacity which will absorb the labour that will become surplus due to techno-logical improvements. It urges a national policy for supply of machinery and finance, restriction of dividends declared to the ratio of gross profits and net profits, not allowing the surplus to fall below a critical minimum and better financial management. The major aims of analysis and conclusions are similar to those made by the Bank Mission. NTC has a 2 pronged programme to improve its performance—the speedier modernisa-tion of its existing units and setting up of 3 export oriented mills with a total invest-ment of about Rs.220 crores. The losses of the mills for 1976–77 will be Rs.30 crores, compared to the previous year's Rs.60 crores. During March leading mills marked up prices of medium variety cotton fabrics due to increased costs and slack demand, it is stated. They have also initially stopped producing non-control-led coarse fabrics, whose demand has shot up. Policy on textiles awaits the new government's decisions. ATIRA announced in March the setting up of a pilot plant for semi bulk evaluation of a project for shortening the processing sequence for the manufacture of poplin, coating and cambric. It also reports standards operations for those three varie-ties and developing substitute chemicals for cost reduction in printing and fini-shing. With the continued rise in cotton prices, CCI reported in March the comple-tion of its current import programme in buying 9.57 lakh bales of cotton worth Rs.248 crores, in addition to the earlier purchase of 8.01 lakh bales at Rs.210 crores. The latest import is being released to the mills, which earlier received 3,72,265 bales and 4,29,542 bales on forward shipment basis. Whenever necessary CCI allocated the cotton on the basis of spindle shift working by mills. And yet the mills have raised cloth prices, as noted earlier, because of the alleged rise in cotton prices. The manner of distribution of the imported cotton also raises questions, as the bulk of it seems to end up with the larger mills. At the end of March, CCI purcha-sed abroad a further 45,000 bales for distribution in June/July.

Shipping and Paper: In March, the government announced a foreign exchange loan of Rs. 500 crores to Indian shipping companies for expansion of their merchant fleet during the remaining two years of the Fifth Plan. Indian Shipping presently carries 28 per cent of the country's foreign trade, including 50 per cent of the bilateral trade with USSR and Eastern Europe. With this loan, the Fifth Plan target of 6.5 million gross tonnes will be attained. At present, the Indian shipping fleet is of 5.12 million grt. On the paper front, 8,80,243 tonnes in 1976–77 have been produced involving an increase of 6 per cent over that of the previous year. The total capacity of the industry is 11,37,000 tonnes, so that 86 per cent of the capacity was used during the year, compared to the previous year's 81 per cent. A recent survey reveals that the production econo-mies of small mills have been seriously eroded and so the government is consid-ering the recommendations of the Development Council for Paper, Pulp and Allied Industries that the import of art paper should be banned and be given to small units and that five varieties from coloured printing paper of 52 gm or below to kraft paper should be reserved for small mills. There is also need for more R and D in the paper industry, whose cost of production (with low labour and raw material prices) is one of the highest in the world.

Sugar and Foundry Products: Sugar production in the fourth month of the 1976–77 season, January was 10.50 lakh tonnes, making a 4 months total of 24.46 lakh tonnes. Total despatches in this period were 12.45 lakh tonnes for internal consumption and 1.64 lakh tonnes for exports, leaving a closing stock of 18.74 lakh tonnes—which is a much better situation than forecast in the last issue (pp 218–219). In total, last year's carry over and this year's production will amount to 50 lakh tonnes. Following the recommendations of a World Bank team, the production problems of the foundry industry are reviewed regularly by an expert panel. The panel at its March meeting concentrated its attention on two causes for the high rate of rejections in the iron castings industry and the means of reducing this defect. It estimated that by the end of the Fifth Plan, the demand for foundry products would be 18 lakh tonnes.

Small Scale Sector: The 5 lakh units in the small scale sector registered in 1976 a 17 per cent rate of growth, increasing their production from Rs. 5,700 crores in 1975 to Rs. 6,700 crores in 1976. The products of small scale industry, cover all industry groups, and as the number of units in each line is large—e. g. 8 to 10 large soap units aginst 5,000 small soap units—the supply in the market is maintained even when the large units contract their production. From the point of view of value added, the most important products of the small sector are metal and chemical products machinery, paper products, printing, electrical machinery parts, components of transport equipments, wood products and leather products. In the consumer goods area, the small scale sector produces 30 per cent of the total output. There are 400 mass consumption products produced by 16 small scale unit groups. In the case of transport and engineering industry, the small units produce 400 products contributing 13 per cent of the gross value of the output. The overall capacity use is low at 53 per cent varying from 81 per cent for leather and 77 per cent for knitted wares to 50 per cent for wood and 35 per cent for candles.

Agricultural Production: The new government after consulting the States, announced on April 12 the 1977–78 rabi policy comprising: (a) inter - State movement restrictions on wheat are removed and the whole country will be one market for wheat, as it is for wheat products (see last issue p 220): (b) wheat purchase price is raised from Rs. 105 to Rs. 110 per quintal and government will buy at this price: (c) no target for procurement has been fixed for 1977–78 and State governments advised to discontinue levy procurement on producer and traders: (d) the issue price of wheat from the Central pool will be Rs. 125 per quintal: (e) price support will be provided to barley at Rs. 65 and gram at Rs. 95 per quintal: and (f) the possibilities to further reduce the price of inputs like fertilisers and insecticides will be examined by the government. This is a major change in the policy of the previous government. Over a 3 year period, keeping the price fixed at Rs. 105 per quintal, fixing procurement targets, purchasing by long and dividing the country into zones between which there was no movement. The immediate effect was a fall in the retail price of wheat by Rs. 5 per quintal. To what extent this policy will increase the income of the small farmer, increase the subsidy burden of the government and provide the stocks for the public distribution system—apart from the buffer—will be examined in future issues

of the Bulletin. By early March, kharif procurement exceeded 37 lakh tonnes and another 7 to 8 lakh tonnes will be procured for the central pool during the next few weeks. In Punjab, the procurement has approached 15 lakh tonnes, against a target of 11 lakh tonnes, in Haryana, it has crossed 5.5 lakh tonnes against 4 lakh tonnes target, in Uttar Pradesh, procurement continues in spite of obtaining the target of 5.5 lakh tonnes. With rabi harvest just starting, it is certain the rabi procurement will not be below last year's 6.5 million tonnes. In fact in early March it had already reached 66 lakh tonnes against a target of 58 lakh tonnes. In Haryana, wheat procurement reached 9.07 lakh tonnes against a target of 5 lakh tonnes in Rajasthan, it was 4.75 lakh tonnes against a target of 2 lakh tonnes, in Madhaya Pradesh, it was 2.75 lakh tonnes against a target of 2 lakh tonnes, in Gujarat, it is 1.37 lakh tonnes against a target of 50,000 tonnes, in Punjab, it is 30 lakh tonnes agginst a target of 28 lakh tonnes and in Uttar Pradesh, it is 17 lakh tonnes against a target of 12 lakh tonnes. The ministry forecasts that the rabi wheat output will be 27 million tonnes, compared to last year's 29 million tonnes. From both the rabi and kharif marketing seasons, the ministry announced on April 7, that a total quantity of 10.8 million tonnes of foodgrains had been procured. Though the new rabi policy does not provide a procurement target as noted earlier, FCI will have to purchase 2 million tonnes of wheat as price support, making the food buffer 20 million tonnes. The problem facing the government is storage. Additional storage capacity is being created so that a total of 20–23 million tonnes may be stored. It is planned to use air strips to store 2 million tonnes and to induce the private sector to take on storage of another 2 million tonnes. With this addition of 5–6 million tonnes, the total storage capacity will be 23–24 million tonnes. But this capacity, which includes 3.2 million tonnes under covered storage to be built with the World Bank's Rs. 200 crores loan will not be ready till 1979. So another problem of the food buffers is the level of food subsidy which has risen from Rs. 31 crores in 1969–70 to Rs. 544 crores in 1976–77. In the interim budget this has been reduced slightly to Rs. 460 crores. Apart from the problems of storage (5 million tonnes are under open storage), the use of this large stock should be considered. Two uses which suggest themselves are extension of public distribution through fair price shops in rural areas and employment generating public works. What need not be seriously considered is the proposal to export these buffer stock foodgrains. Apart from the economics of it, there is the moral issue of a country, the majority of whose population lives below the poverty line, exporting its foodgrains. The other problem is price support operations. With the large supplies coming on to the market, FCI has to engage in price support operation so that farmers will not face a falling price problem. Further the previous government had decided to import 4 million tonnes of foodgrains this year, because the estimate of this year's production is 8 million tonnes less than last year's 120 million tonnes. (The new government announced that the import of foodgrains might be stopped from next year). As against this reduced 112 million tonnes output, the demand is likely to be 115 million tonnes because of the 2 per cent population increase. US has approved the export to India 5 lakh tonnes of foodgrains under its Food for Peace Programme and EEC has offered 8 lakh tonnes. The remaining 2.7 million

tonnes will be purchased at a cost of $ 300 million. The main problem here is the inflationary pressure which those food-grains imports, (along with the Rs.500 crores import of cotton and edible oil) will exert on the economy. On the fertiliser side, the government reports that the consumption of fertilisers for 1976–77 increased by 29 per cent over that of the previous year. The increase was more in rabi because of the good weather condition during rabi, unlike the drought in some kharif areas, the better organised fertiliser distribution net work, and the special measures of the Union and State governments. Still there is a long way to go to reach the official targets and also the pattern of consumption needs to be changed so that more potash is used and not only the increasing use of nitrogen fertilisers. From this point of view, the proposal to further reduce the price of fertilisers through a withdrawal of sales tax proposed by the Union government to the State government and the reduction of the interest rate to distributors by RBI and the banks to 7 per cent also proposed by the Union government moves are in the right direction, as they will reduce the price of urea by Rs. 180 per tonne and DAP by Rs. 270 per tonne. It is estimated that nitrogen fertiliser consumption will be 12,92,000 tonnes during the coming kharif, phosphate fertilisers 4.4 lakh tonnes and potash 2.5 lakh tonnes—against last year's 8.63 lakh tonnes, 1.29 lakh tonnes and 1.17 lakh tonnes respectively. The government also reports that it has decided to build a fertiliser buffer of 8.8 lakh tonnes during 1977–78, as part of the policy to stock 20 per cent of the annual fertiliser requirements and also to meet some fertilisers deficit pockets. The total requirement of fertiliser for 1977–78 is estimated at 44 lakh tonnes comprising 31.3 lakh tonnes of nitrogenous fertilisers, 8.8 lakh tonnes of phosphates and 4 lakh tonnes of potash, being an increase of 9 lakh tonnes over the consumption in 1976–77. The problem with a fertiliser buffer is to ensure against deterioration, as the life of fertiliser is about a year to a year and a half. The Agricultural Census of 1970–71 published in 1975 (and NSS data) shows that one half of operational holdings are of the size of less than one hectare, covering 35.7 million households. They hold only 9 per cent of the cultivated lands. Small holders (1–2 hectares) are 19 per cent of total cultivating households, commanding 12 per cent of cultivated land. This means that marginal and small farmers constituting 70 per cent of the cultivating households hold only 21 per cent of the total cultivated land. The third group is the semi-medium (2-4 hectares) who are 15.2 per cent of the cultivating households and command 18.5 of the cultivating land. The medium and large cultivators (4 to 10 and 10 and above) who are 11.3 per cent and 3.9 per cent of cultivating house-holds command 29.7 per cent and 30.9 per cent of the land. While 35.7 million household operate only 14.5 million hectares 2.8 million household operate 50.1 million hectares. Such is our skewed land distribution.

Exports: For the first 10 months, April 1976 to January 1977, exports earnings show a rise of 30.4 per cent over that of the first 10 months of 1975–76 at Rs. 3,979.6 crores, with the likelihood that for the year it will reach Rs.4,800 crores, crossing the target of Rs. 4,500 crores. On the import side, at Rs. 4,039.8 crores, there has been a decline of 7.8 per cent during the period, making the trade deficit Rs. 60.4 crores compared to the Rs. 1,329.1 deficit for this period in 1975–76. For the 11 months, April 1976 to February 1977 exports totalled

Rs. 4,439.9 crores and imports Rs. 4,520.5 crores, leaving a deficit of Rs. 80.6 crores. In March exports will be similar to the Rs. 460.6 crores of February and imports Rs. 480.7 crores as in February, resulting in (a) the export target of Rs. 4,800 crores being surpassed and (b) a deficit of a little over Rs. 100 crores undergoing for the year. The good performers during February and March were tea, coffee, cashew, textiles, oil cakes, fish, leather and engineering goods, iron and steel, handicrafts, coir and chemical products. The rising export trend started in 1972–73 at 22.5 per cent, followed by 28 per cent in 1973–74, 31.9 per cent in 1974–75 and 18.4 per cent in 1975–76. In 1975–76 the export volume grew more than unit value realisation and in 1976–77 the volume has further increased. The export volume increased by 18 per cent in the first half of 1976–77 and is likely to be sustained during the second six months. The unit realisation however increased by 5.1 per cent during the first six months, compared to the 7.7 per cent rise during the first six months of 1975–76, and is likely to remain at that level during the second six months, because while international prices for tea and coffee are buoyant, those for steel etc. are declining. Thus it is quantum increase rather than increased unit value that accounts for the April to December 1976 exports of Rs. 3,546 crores which was a 31 per cent rise. Vol V pp 343 and 402 called attention to the danger of the export increase resting on price increases —22 per cent and 25 per cent—for the 2 years while the quantum increase was only 4 per cent and 6 per cent. Again while the quantum expanded in the face of a decline in unit value in the case of iron, steel, textiles and chemicals, it declined in the case of tea, coffee and spices despite an improvement in their unit value, which means that certain imports from India tend to be inelastic to price changes because of constraints in marketable surpluses. Equally the balance of trade is a function of our import trend. For April–December it was Rs. 3,592 crores which was 8.3 per cent less than the first 9 months of 1975–76 due to lower imports of fertilisers, foodgrains, iron and steel, cotton, machinery, transport equipment and petroleum products. But in the long run imports of machinery will increase with improved industrial activity, and, as noted earlier, during the year larger imports of cotton, edible oils and man-made fibres will be made so that 1976–77 will end with a larger deficit than the expansion of exports would seem to justify. Also the import data comes in with a time lag, so that the real deficit even for the period April–January of Rs. 60.4 crores is liekly to be larger. For the year export subsidy has been of the order of Rs. 300 crores and for 1977–78 is estimated in the interim budget at Rs. 303 crores. The country's exports to West Europe during the first eight months, April–November, was Rs. 916.23 crores, representing an increase of 67.2 per cent. ECM's share was Rs. 811.44 crores, an increase of 66.1 per cent, including UK, Rs. 327.89 crores being an increase of 30.8 per cent, West Germany Rs. 142.19 crores, an increase of 104.7 per cent and Italy Rs. 74.52 crores, an increase of 89.1 per cent. During the first nine months, April to December, engineering exports increased by 36 per cent at Rs. 385 crores, and by 40 per cent at Rs. 435.5 crores during the ten months April to January, so that the annual target of Rs. 550 crores will be reached. Orders on hand amount to Rs. 871.6 crores. Steel pipes and tubes trebled in value to Rs. 41.5 crores and other important items are textiles and jute mill machinery, sugar mill machinery, food processing machinery, cokeoven

plants, earth moving equipment and power generators. 600 foreign collaborations approved by DGTD will earn Rs. 2,400 crores over a 5 year period. Engineering India Limited signed contracts with six countries and will be doing so with 12 others to provide technical assistance and design services for setting up steel plants, sugar mills, and a number of other plants. Railway workshops are supplying Uganda with 20 coaches and spares, along with Rs. 10 crores worth of 15 diesel locos, 17 coaches, 5 re-conditioned steam locos, 50 wheel and axles assembly, 3.6 million ticket blanc and one motor truck frame. Steel exports will go up by 40 per cent in 1976-77 to 1.8 million tonnes and with iron exports will increase 200 per cent to 2.43 million tonnes valued at Rs. 315 crores. Indian carpets are increasingly making a dent in the export market which has been an exclusive preserve of Iran. In 1975-76 their exports were valued at Rs. 41.43 crores and for 1976-77 it is estimated that it will be Rs. 55 crores. This market can be doubled if the All India and the UP and Kashmir handicrafts Boards can train more master weavers. India's exports to US in 1976 was $ 710.2 million, an increase of 29.5 per cent and imports were $ 1,134.7 million, being a decline of 12 per cent, reducing the trade deficit from $ 741.5 million in 1975 to $ 424.5 million in 1976, the two way trade between the 2 countries being $ 1,844.9 million. The main exports from India were ready-made garments, iron and steel bars and wires, sugar, marine products, leather, hand and machine tools and jewellery and precious stones. Silk exports spurted in January to Rs. 1.42 crores, the first 10 months. April 1976 to January 1977, totalling Rs. 17.89 crores, exceeding the year's target of Rs. 16 crores. Exports of rayon ard synthetic textiles increased to Rs. 28 crores during the 10 months April 1976 to January 1977 representing an increase of 67 per cent, so that the year's target of Rs. 37.5 crores will be reached. The major export item was fabrics earning Rs. 23 crores. Malaysia, Singapore and Japan have placed an order for cotton handloom and silk fabrics of Rs. 2 crores, increasing their exports to those 3 countries to Rs. 15 crores per annum. Exports of chemicals and allied items during the period, April to January, was Rs. 101 crores and will exceed the year's target of Rs. 117 crores. Auto tyres and tubes, paints and varnishes, glass and plywood and ceramics were the major export items. Indian textile machinery exports are declining because of stiff international competition, reducing their export earnings from Rs. 23 crores in 1975-76 to Rs. 3 crores in 1976-77. In an effort to increase the country's sea food exports, the Shipping Corporation of India is chartering small refrigerated ships of 400 to 500 tonne capacity for meeting the demand of marine product exporters in the eastern region. Again to boost exports from the eastern region, the government is studying the constitution of a freight equalisation fund or extending a freight subsidy to offset the extra Rs. 115 per tonne port charge at Calcutta, because of the large voyage, high stevedoring charges, and increased time taken for loading at the port. Similarly the government has decided to grant the facility of importing machinery to exporting units in the mining industry and licenses for imports of parts of watches on a liberal basis to dealers for repairs and maintenance purposes. It also announced an increase in inward remittance during 1976 of Rs. 1,515 crores (in 1972 it was 323 crores, in 1973 Rs. 396 crores, in 1974 Rs. 569 crores and in 1975 Rs. 1,053 crores,) due to the measures taken by Enforcement Directo-

rate, according to the government. The amount of this in the form investment at very hard rates by Indians resident abroad should be published to judge the validity of the official claim that it is due to action against smuggling and black market. RBI reports that for the week ending March 18, foreign balances rose to Rs. 1,343.65 crores from Rs. 1,594.39 crores in the previous week.

Aid: India and Japan signed a 10 billion yen commodity loan agreement in March for financing import of steel equipment and chemical fertilisers. The loan is repayable in 30 years, with a 10 year grace period, at an interest rate of 3.5 per cent. UK as part of the 1977–78 aid package of £ 180 million agreed to provide £ one million of equipment for a plant at Haldia to produce the essential ingredient of synthetic detergent. In March France an India signed an agreement for a credit of 340 million Francs to finance industrial projects, purchase light equipment and other commodities. USSR will provide Hindustan Copper's Malangkhard Copper Project, assistance in mine designing and planning for this first large sized open pit mine in Madhya Pradesh. Also in March IDA agreed to provide a credit of $ 150 million for the Singrauli super thermal power station in Uttar Pradesh and $ 18 million for a project to increase fisheries in Gujarat. The World Bank is finalising in April its report on the Indian economy and external aid for the Aid India consortium meeting in Paris on January 4 and 5. While 1975–76 saw an 8.8 per cent growth, the 1977–78 picture is a mixed one calling for an aid commitment of not less than what was provided in 1976-77 of $ 1,775 million, it is believed to suggest.

International :

Pakistan: In mid April Indo–Pakistan trade talks resulted in a decision to set institutional machinery in the form of a joint committee at the leval of secretaries to review periodically the flow of trade between the two countries. India will buy more goods from Pakistan in addition to cotton and will be selling to it industrial alcohol, gypsum, rock salt, dried and fresh fruits. Solutions to railway transport congestion and improved customs formalities are to be worked out on both sides.

World Monetary Reform: IMF, with the agreement of the developed countries and the OPEC is negotiating a new $ 12 billion stand–by credit which is to be used for loans to developing countries which have been badly hit by the most recent rise in oil prices and the sluggish international economy. This is part of $ 75 billion that IMF is trying to raise for loans to countries in financial difficulties. US, West Germany, Saudi Arabia and Kuwait have agreed to contribute to the Fund. On April 6, the fund auctioned 524.800 ounces of gold at prices ranging from $ 148.55 to $ 151 per ounce. This raised $ 57 million adding up to a total of $ 506 in the special fund for loans to poor countries. The next auction will be on May 4. Also in March, twenty six donor nations meeting in Vienna decided to contribute to the Fifth IDA replenishment of $ 7.6 billion, which compares to the Fourth replenishment of $ 4.5 billion. But the lateness of this replenishment, which is still subject to legislative approvals by donor governments, the target of $ 9 billion set by the World Bank President which included contributions of $ 7.5 billion by the developed and $ 1.5 billion by OPEC countries which was not attained and the

erosion of the real value of this sum over the next 3 years because of inflation means that the UNCTAD financing proposals and Second Development Aid targets must be implemented. During March, the Bank of England in UK further reduced the bank rate to 11 per cent and in April to 9.5 per cent. Also the price of gold rose above $ 150 per ounce to $ 152.875 at Mid April. Israel devalued its pound by 12 per cent during the month. There was a suggestion from the ECM countries that UK should raise the exchange value of the pound. Sweden, Norway and Denmark on April 2 devalued their currencies against other members of the European joint float or "snake" —Sweden by 6 per cent and Norway and Denmark by 3 per cent each. This part of international monetary relation is still in some disorder.

UN and World Aid: UN reports that development finance reaching developing countries rose from $ 25 billion in 1973 to $ 42 billion in 1976, which, a nominal increase of 67 per cent net allowing for inflation, is a real increase of 25 per cent. Of the 67 per cent increase, 15 per cent was provided by OPEC. Only the Netherlands and Sweden reached 0.7 per cent of their GNP in ODA. In a similar report, ILO points out that for every dollar given to the poor countries to continue buying from the West, the "donors" receive 3 dollars in return; while the developed countries spend $ 200 billion annually in armaments, they spend on aid only $ 12 billion; that the worsening of the terms of trade is seen in a tractor costing 3 to 4 times in 1972 what it cost in 1962 in terms of sugarcane or coffee. On the positive side, in the context of the UNCTAD discussions in Geneva in March on the proposed $ 6 billion fund to boost export earnings by stock piling 12 commodities, coffee, sugar, cocoa, rubber etc. to give the developing countries more assured returns on their raw materials exports, (see Vol VI pp 317 and 318), the US has agreed to negotiate between the developed and developing countries to establish a $ 3 billion fund for stabilising commodity prices through financing of commodity buffer stocks. This is an important break through and should lead to realisation of the UNCTAD plan by November on the basis of the narrowing of differences at this March/April meeting which together with the provision of increased resources to IMF and IDA reported earlier might be completed by more liberal trading arrangements.

OPEC: OPEC members announced two large scale decisions in March. They set up a $ 1.6 billion fund to be used as interest free loans repayable after 20 years to the developing countries facing problems from the higher oil prices. Out of this, $ 143 million were allocated at the Vienna meeting to finance industrial projects in 38 developing countries. The fund also included the $ 435.5 billion pledged to the International Fund for Agricultural Development (see Vol VI p 540) and another $ 184 million loaned to the developing countries since January. The second development was the pledge of Saudi Arabia, Qatar, UAE and Kuwait of $ 1.5 billion at the Afro – Arab summit conference in Cairo in early March for the development of African countries. Of the total, Saudi Arabia's contribution is $ one billion to be given to Arab and African countries for their development purposes. Kuwait's share is $ 240 millions, $ 200 millions to African countries over the next 5 years on soft terms, $ 20 million for the Arab Development Bank, $ 10 million to the African Development Bank and another

$ 10 million for feasibility studies. Qatar's share of $ 76 million, includes $ 50 million to African countries, $ 20 million to the Arab Development, $ 5 million to the African Development Bank and $ one million for feasibility studies. UAE pledge $ 137 million, comprising $ 100 million to the African coutries, $ 20 million to the Arab Development Bank $ 10 million to the African Development Bank, $ 5 million for feasibility studies and $ 2 million for African liberation movements. The Bank of England reports a fall by $ 2.5 billion of the reserves of the OPEC, despite a rise in their annual oil revenues by $ 16 billion, due to increased imports becoming a large balance of $ 33.2 billion. They invested $ 11.5 in US shares and real estate in addition to their 1975 investment in these US sectors of $ 6.7 billion, and $ 4.5 billion in UK in addition to the 1975 investment of $ 4.3 billion. They also reduced their UK investment in 1975 by $ 1.9 billion which caused the financial crisis leading to the $ 3 billion loan from the US and Western European Banks (see Vol VII p 152).

UN Conference on Water: The United Nations Conference on water opened in Mar Del Plata, Argentina on March 16 to review and make recommendations on how the world's water supply can be best used for domestic agricultural and industrial purposes. About 97 per cent of the world's water is salt water, only one per cent is fresh water and 99 per cent is located underground. The problems are that with this limited supply, world population will be doubling by the end of the century, water, is in short supply in some countries and over abundant in others, more than half the rural people do not have protected water supply and pollution of water is fast spreading. The conference faces therefore urgent tasks. It must establish an inventory of world water resoures, establish or recommend plans for providing the one billion rural people with safe drinking water, propose methods of developing effective national water policy and planning to estimate national water resources and ensure their optimum use for domestic, agriculture, and industrial purposes and equally important, develop an international policy and plan for water use. These are important tasks. The Conference had before it a proposal that one per cent of the 300 billion being spent by all countries on armaments should be released and used for water development. Discussions are underway on priorities—optimal use of existing sources or development of new sources and the kind of international machinery on water that is needed. The conference adopted the Mar Del Plata Action Plan setting forth guidelines as means of increasing drinking water supply, the use of water for industry and agriculture, the preservation of ecological balance within the frame-work of overall development and an invitation to the UN Secretary General to take steps to increase financial aid for water projects in the developing countries.

World Trade: GATT reports that in 1976 world trade rose by 12 per cent, valued at $ 980 billion, being twice the rate at which production increased and 4 per cent above the record 1974 level. The industrialised countries imports rose by 13 per cent, exports by 10 per cent and their trade deficit was $ 52 billion due in part to the 17 per cent rise in their oil imports. The developing countries on the other hand showed a record rise in their oil imports. The developing countries on the other hand showed a record surplus of $ 65 billion, which of course included the OPEC countries. The deficit of the non-oil producing countries was $ 24

billion in 1976 against $ 74 billion in 1974. Though world trade is passing the $ 1,000 billion mark the recovery in commodity output was only half that of trade and unemployment levels are still high. This means that governments in 1977 will formulate their trade policies against a back drop of continuing domestic unemployment inflations and maturing payment imbalances. GATT warned in April that the negotiations to free world trade flows will be impeded unless the bargaining on farm products is speeded up. The US wants negotiation on industry and agricultural concession to be jointly undertaken, whereas EEC wants agricultural discussions to be kept separate. It has set up an agency for trade co-operation with developing countries at its headquarters in Brussels and is considering setting up an Indo-EEC chamber.

Coir International: The FAO intergovernmental group on hand fibres which met in March in New Delhi was attended by 23 producing and consuming countries. It decided to set up a working party of 3 producing countries (India, Sri Lanka, and Phillippines) and three consuming countries (U S, France and West Germany), along wrth UNDP, International Trade Centre of UNCTAD and EEC to develop a detailed plan for establishing a Coir International Organisation to help maximise comsumption of the fibre through improvements in quality and technical features so that the product can be tailored to meet consumption needs and through R and D reduce costs of production and processing. An FAO-UNCTAD secretariat paper estimates that the total financial need for the Coir International will be $ 31 million, to provide stability to the industry, guarantee employment and incomes to those dependent on it and maintain the export earning of the producing countries. This financial outlay will fund national stocks in India and Sri Lanka;—if India is to stock 500 tonnes of fibre, 4,500 tonnes of yarn, 2,500 tonnes of coir manufactures, the cost will be $ 4.25 million;—if Sri Lanka stocks 3,000 tonnes of fibres, 500 tonnes of yarn and 7,000 tonnes of mattress fibre, the cost will be $ 2.425 million. The outlay will also assist the countries in production management and adjustment measures, promote and fund R and D centres and programmes, help in the transfer of technology and maintain a coir production office in Europe. The working party should produce a draft proposal by the year end.

Comunbana and Tea Association: To break the stranglehold of transnational corporation, 6 Latin American countries—Colombia, Costa Rica, Handures, Dominican Republic, Gautemala and Panama signed in March an agreement for the formation of a common enterprise for the export of bananas—Comunbana. The organisation is starting with exports to Eastern Europe, and will be extending its activities to US and West Europe during the course of the year. The International Association of tea exporting countries agreement referred to in the last issue (p 227), was opened for signature at UN, Geneva on April 15. Six months after 7 countries whose exports equal 2/3 of total world tea exports have signed the agreement, it will come into effect.

Asian Employment and Economy: ILO computes that 180 million new jobs have to be created in Asia by 1980 to meet the demand for employment. This is a very large and almost impossible perspective but it is linked with the world employment strategy developed at the World Employment Programme

centred around the anti-poverty and provision of basic needs strategy. Unless the basic needs strategy becomes the centre of Asian Planning, its perspectives of meeting the vast employment needs of its people in the coming 3 years will not be bright. ESCAP's annual survey shows recovery signs in 1976 in Asia, with slower growth in the larger countries and widening of income disparities. For instance it reports India's average growth rate for 1970-75 at 3.1 per cent against 4.8 per cent in 1965-70. It also emphasises that the pattern of production should be reoriented towards goods for mass consumption, with quantitative production targets for wage goods and distributive targets for such wage goods to ensure that benefits reach the poorest sections.

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II Agricultural Development

Paddy and Foodgrains Production :

March reports did not contain detailed information on the samba crop and the second crop now being harvested and coming on to the market. What reports are available indicate a serious and sound change in the traditional cropping pattern of the State, forced, in a sense, on the farmers as a result of the failure of the South West monsoon and the late and continuing North East monsoon referred to in Vol VI pp 438 and 488 and Vol VII pp 1 and 2. As a result the groundnut crop has been sizeably expanded and the government anticipates that 2 lakh more tonnes of groundnuts will be coming on to the market in April and May, with the effect of lowering groundnut oil prices which have climbed to almost record heights in the State and Country. In the Tirunelveli district, the failure of the South West monsoon and the low water level of the river and its catchment area forced a sharp reduction in the first kar paddy crop. In this district even the North East monsoon was deficient, leaving the 3 taluks of Sankarankoil, Tenkasi and Tirunelveli deficient. The first kar paddy was sown over only 30,000 acres instead of the normal one lakh acres and even the second pishna crop had to be reduced by 50,000 acres. This meant that for this year, the district would produce 2.78 lakh tonnes of paddy instead of 4.05 lakh tonnes. It is at this point that with the help of the Department of Agriculture, the farmers adopted an alternative strategy, under which instead of the tank irrigated paddy, the farmers decided to use the same water to grow cholam over 10,000 acres and in the low storage tank ayacuts in Nanguneri, Valliyoor and Radhapuram blocks, cumbu is being raised over 2,600 acres, adding 2,100 tonnes of foodgrains to this year's grain output. Taking advantage of the late February rains, they have also decided to grow summer

cholam over 10,000 acres for an additional production of 8,000 tonnes of this millet. Taking a ratoon crop of cholam, a further 4,000 tonnes is being produced, so that from this new cropping pattern 69,700 tonnes of foodgrains will be produced. Dry land farmers have also adopted a new pattern where instead of concentrating solely on cotton as they do in the Koilpatti area, they are replacing the 5 acre sowing of 2:2:1 of cotton, cumbu and fodder cholam, by a new pattern of 2:1·5:1:·5, the last two being cholam and fodder cholam, thereby increasing total grains output and their per acre incomes to Rs. 2,000 per year. In other dry areas as in Ambasamudram, Tenkasi and Tirunelveli blocks, similar cropping pattern changes are being introduced in growing short duration pulses followed by sesame or oil seeds. On the marginal dryland senna is being grown, which has a high export potential. Thus in evaluating this year's foodgrains production, account must be taken not only of the quantitative measure and magnitute of the foodgrains produced, but what is of far greater and long term significance, the change in the cropping pattern in both wet and dry lands that this year's varying rainfall has introduced in the State as somewhat of a silent revolution.

Kitchen Garden Campaign:

The Thaipattam vegetable campaign, called for short the Kitchen Garden Campaign referred to in Vol VII p 157 has spread to all the towns in the State. Vegetable and fruit seeds and seedlings are made available to house–holders at low cost, along with the necessary fertilisers and pesticides in 1 kg and 2 kg packages. The result is an increasing supply of vegetables and fruits in the State and low energy ratios. In these kitchen gardens one unit of energy produces 30 to 35 units of energy and in a situation of serious energy shortage, this low energy ratio for food products is a long term and substantial gain for the State and the Country.

Research Results:

Further to the change in the State cropping pattern referred to earlier, new *high yielding short duration paddy strains* are being released from the surrounding research stations. The paddy experimental station at Ambasamudram has brought out a high yielding low fertiliser needing paddy variety, AS–3704, which yields 5,610 kg. per hectare, and requires only 50:25:25 NPK per hectare at a total cost of Rs. 500. To meet the Southern districts' problems of drought and soil acidity, the Station is also testing 3 varieties—AS–889, AS–1391 and AS–3827. AS–889 matures in a little over 3 months and yields 4,738 kg. per hectare and is suited to the first kar paddy season. AS–1391 is an even better yielder at 6,343 kg. per hectare and matured in and around 3½ months. AS-3827 has not only these qualities but is pest resistant. The station has also demonstrated that ponni and IR–20 are suited to the Southern districts, yielding 4,640 kg. per hectare in 4 months. The Aduthurai Station has demonstrated that Triveni IR–30 and ADT–9 are suited to ill drained farms. Also the CRRI strain CRM–13–3241 has been tested in the area and its moisture stress quality confirmed. Similarly the *cotton and millet experimental station at* Koilpatti has evolved four short duration good yielding ragi varieties—KR–178, KR-176, KR–177 and H-929/1. KR–178 comes to maturity in 2½ months and yields 1,000 to 1,200 kg. of grain per acre. KR–176 which *can be grown throughout* the year in a little over 3 months, is

resistant to blast disease. The other two varieties are very much higher yielders, averaging 1,800 kg. per acre. The Tamil Nadu Agricultural University has evolved a new groundnut variety, 0.05–39.2, with 109 days duration and yield of 2,257 kg. per acre. At a time of oil scarcity of oil seeds this might be a real breakthrough. A minor millet, kudiraivali has also been improved in the variety K-2461, which yields 1,300 kg. per acre and is of medium duration. The Ambasamudram paddy experimental station is also extending and applying the research results of IRRI and CRRI for reducing the quantity of chemicals applied to high yielding paddy varieties, where proper timing can reduce the amount of chemical fertilisers needed and identified insecticides can reduce the incidence of pests like whorl maggot and sheath blight disease for rice. The Cuttack station has released a miracle rice variety CR–13–3241 maturing in 70 days and yielding 2 to 2.40 tonnes per acre.

Cotton :

It is proposed that the Intensive Cotton Development Programme in the Koilpatti area has increased total output in 20,000 hectares covering 11 villages from 9,200 bales in 1974-75 to around 12,000 bales this year, through introducing improved cultivation practices and using Laxmi, MCU–6, K–8 and MCU–5. Using subsidised and rented power operated equipment, the farmers adopted fertilisers and organic manure in their dry farms for the first time to boost production. To increase the per hectare yield of lint from 0.33 to 0.46 bales to 0.50 bales, the programme diffused the technology through its 20 large demonstration projects, each covering a 50 acre block, over a total of 1,000 acres. The programme has used the facilities of the programme and experimental research station at Koilpatti to try out new varieties which are drought resistant, of short duration, high yielders, pest resistant and of good fibre quality.

Sugar Beet :

In mid April, the Dharmapuri District Development Corporation launched a Rs. 50,000 research scheme to identify suitable varieties of sugar beet for various parts of Tamil Nadu. The project is centred at the Tamil Nadu Agricultural University's Payyur Station. There have been encouraging results in the pilot programme of the mills in raising sugar beet and producing through the diffuser sugar. To put up a mini sugar beet plant at a cost of Rs. one crore, 6,000 acres must be brought under sugar beet production. This would also compensate the continuing shortfall in cane output which for the current year is 20 lakh tonnes at 36 lakh tonnes.

Cloves and Pepper :

As reported in Vol VII p 157, clove cultivation is spreading in the region of Nilgiris, Tenkasi and Kanyakumari. The problem for the farmer is the long gestation period, as the tree starts yielding in the 7th or 8th year, and is at the full bearing stage only in the 15th year. The Department of Agriculture computes that on a one hectare plantation, the expenditure till the bearing stage is Rs. 23,000, plus the annual maintenance charges of Rs. 4,000 per hectare. On the basis of the average yield of 350 kg per annum, the annual gross income after the bearing stage is reached will be Rs. 40,000 per hectare. Against a normal yield per tree of 4–8 kg. the average yield per tree in the State is only 2.5 kg. There is need for research to improve and push up yields. Also cloves can be grown along

with other commercial crops such as arecanut, coconut, nutmeg etc, and these also should be further developed. On the side of pepper, panniyur–I, hybrid pepper evolved at the Cannanore research station is fast spreading in the Kanyakumari district. It is quick growing, hardy and heavy yielding. It yields 10,500 kg. per vine against the conventional variety's yield of 5,590 kg. In Nagercoil, pepper growing is a homestead garden crop and 80 per cent of the crop is derived from this source—which is a good export income earner at Rs. 12 crores per annum. But the State contributes only 2 per cent of the total crop (Kerala contributes 96 per cent) and should be expanded in the Nilgiris, where it can start producing from the second year. The cost of raising one hectare of pepper plants till the yielding stage in 5 years is Rs. 7,000 plus Rs. 1,500–2,000 per annum. The average net return per hectare is Rs. 3,500 per year and as well looked after plants live upto 60 years, amd 1,000 plants yield 1,000 kg. of dry pepper, this is a produce which should be popularised in the southern areas of the State.

Dairy Farming :

One of the essential elements to improve the cattle breed and milk yield in the State is cattle feed and fodder. It is estimated that our cattle receives only 40 per cent of the nutrition that they need for optimum milk production, due in the main to the high price of the ingredients that enter the feed mixture. Fodder has become a high priced article and there is need for research and demonstration to convince the farmers of the profitability of growing fodder crops. In a small way, the drought stricken Tirunelveli farmers have experience of this fact. It is now necessary for the Department of Agriculture to launch a fodder production programme covering both grass and legume, which when combined with the activities of the Departments of Animal Husbandry and Dairy Development will benefit the farmer doubly through both higher milk yields and better returns on the fodder sold. The Tamil Nadu Agricultural University has brought out some good varieties of hybrid grasses and legumes suitable for garden and dry lands—such as Napiur hybrids NB–21 which gave 500 tonnes per hectare at the RK dairy farm. Another variety BN–2 produced 50 per cent more grass than NB–21. The University's Department of Forage crops is intensifying research on fodder crops.

Fish Farming :

The Tamil Nadu Fisheries Department's Inshore Fishing Station at Cape Comorin is undertaking a systematic survey of the Wodge Bank, a rich fishing ground 60 KM from the coast. In order to the mechanised boats, two large sized boats (57 feet) are being used and has resulted in catch of 1.5 tonnes of "parai" and "perch" varieties by one vessel and a catch of 225 kg by the other. The potential of the Wodge Bank is 25,000 tonnes per annum, of which only 2,000 tonnes is now being caught. The State government announced in March, work on a Plan for a life insurance scheme for fishermen. At present loss of life and other damage suffered by fishermen are not compensated. Within a ceiling of Rs. 10,000, the details of the compensation to be paid, the kind of damage that would need to be compensated and the rate and method of compensation are being worked out.

Tea :

Tea production in 1976 was 512.1 million kg., registering an increase of 20

million kg. for North Indian tea at 400.6 million kg. and an increase of 4.9 million kg. for South Indian tea at 111.5 million kg. In January 1977, South Indian tea production was 8.2 million kgs. and the North Indian crop also is coming along nicely (the North does not produce tea during the first 3 months—January–March), so that this year's total production will exceed last year's 512.1 million kg. Since the beginning of the century, tea production has been increasing at the rate of 50 billion kg. every 5 years. Last year's increase of 24.6 million kg. means that now the quinquennial increase is 100 million kg., which also means that our target of 1,000 million kg. by 2001 will be attained. Tea prices were at their highest in 1976, the average price increase being between 25 and 30 per cent compared to the previous year's prices and the expanded demand for Indian tea is continuing. With a view to bring down tea prices and increase its availability in the domestic market, the government on April 9 decided to (a) impose an export duty of Rs. 5 per kg, exempting tea bags and instant tea: (b) withdraw rebate on tea exports, and (c) withdraw facility to export tea free of duty under bond. Sri Lanka's tea production declined by 17.1 million tonnes to 193.6 million kg. in 1976 because of the drought, while Kenya production increased by 5.3 million kg, Bangla Desh by 4.2 million kg., Tanzania by 0.4 million kg., and Malawi by 2.5 million kg. It is estimated that against a world production of 746 million kg. (same as 1975), Indian exports will be 220 million kg. Pakistan has now become India's fourth major consumer particularly South Indian tea at 44.2 million kg. The higher Indian tea production and exports are keeping international tea prices from rising further.

Coffee:

The 1975–76 coffee crop totalled 84,000 tonnes and for 1976–77 is estimated at 92,000 tonnes. The earnings of coffee export for 1976–77 are estimated at Rs. 150 crores. In the eight months of the fiscal year 1976–77, exports were 40,386 tonnes valued at Rs. 97.38 crores. In March international coffee prices shot up and led to higher export earnings. For the year 1976–77, 55,000 tonnes have been allocated for export. NCEAR and IIM, Ahmedabad are making studies for the coffee Board for coffee development during the next 25 years and on the development needs of the Board. The Union government has made a loan of Rs. 3 crores to the Board for intensive cultivation and replanning and Rs. 7 crores to small planters under the interest subsidy scheme of the banks.

Rubber:

In the first 11 months of 1976, production of natural rubber increased by 10,363 tonnes to 1,29,079 tonnes and the corresponding increase in consumption was 3,754 tonnes and the stock was 5,182 tonnes. Prices improved slightly and in February 1977 was Rs. 618 per quintal. Exports which started in May 1976 totalled 6,360 by November—at a price of Rs. 786.35 per quintal. It is also reported that the first lot of natural rubber grow by Goa's forest department was handed over to MRF in February, on the basis of which the Goa government is planning to increase its rubber plantation from the present 350 hectares to 2,500 hectares.

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III Industrial Development

Salem Steel :

Work on the first stage of the Salem Steel Plant has been approved by Union government and has been started. The first stage which will cost Rs. 126.81 crores including a foreign exchange component of Rs. 29.35 crores will have a capacity of 32,000 tonnes in special steels will be completed in 54 months. The overall size of the plant, it will be recalled, is 2.2 lakh tonnes at a cost of Rs. 560 crores. The first stage is divided into 2 phases, the phase to be completed by October 1981 will produce cooled rolled stainless steel sheets and strips using imported hot rolled coils. The second phase will add facilities for the production of stainless steel slabs and hot rolling. In the first phase the annual output of stainless steel will be around Rs. 100 crores. A Salem team will be visiting the International stainless steel makers to finalise the collaboration agreement for the project and place the equipment orders by the end of 1977–78. In the first phase 2,000 persons will be employed and when fully functioning 7,500 persons will be employed. In the second stage production of silicon steel and other special steel is to be taken up, when iron making facilities based on Kanamalai iron will be used. Then facilities will be provided for melting and refining of stainless steel, continuous casting and hot rolling of slabs, taking the production of stainless steel to 70,000 tonnes per year. In the first phase, iron-ore requirements will be met from the Bellary—Hospet area, pearl coke will be supplied from Bokaro and Bhilai, coke from one of the steel plants and pedigree scrap from Bokaro.

Neyveli :

In addition to preparing work on the second mine cut which has been cleared by the Union government, (see last issue p 228), two 70 tonne capacity mobile cranes were commissioned at Neyveli in March. The cranes are being used to handle heavy loads under the mining expansion programme, and being electrically controlled moves the lignite with speed and efficiency. In 1976–77 its power generation was 3,315 million units (2,511 million units in 1975–76), urea production was 95,476 tonnes (60,172 tonnes in 1975–76), lignite production was 40.2 lakh tonnes (30.27 lakh tonnes in 1975–76) and leco production increased from 30,538 tonnes to 48,359 tonnes.

B and C Mills :

The full working force was taken back in B and C Mills by March 10 on the basis of an agreement between the union and management under which a sum equivalent to pay the basic wage and DA for the closure period will be paid to each worker. The advance paid earlier will be deducted from the second instalment, and the credit extended for food supply during the closure deducted from the CD payable in July 1977. The Board of Directors has been reconstituted, with a new managing director nominated by the government and with representatives of IDBI, the State Bank and State and Central governments.

BHEL :

BHEL will be produced next year the first fluidised combustion boiler (FCB) to replace the oil fired boiler in industry. It has gone a long way in designing,

fabricating and installing a proto-type coal field (FCB) that can generate ten tonnes of steam per hour at 10 atmospheric pressure. Another project coming out of its RTD complex is the MHD for power generation. Government has cleared this Rs. 11 crore project for BHEL. Here again BHEL is putting up a pilot plant of 5 MW thermal unit based on the MHD concept. These are advanced and sophisticated technologies being developed by BHEL—comparable with the best in US or USSR.

Sugar :

The sugar industry in the State which has had 2 bad years will have a slightly better record this year—but only slightly. The factories in the State will be crushing 39 lakh tonnes to produce 2.9 lakh tonnes of sugar this year 1976-77, as against the last normal year 1973-74 when 55 lakh tonnes of cane were crushed and 4.68 lakh tonnes of sugar produced. The 1976-77 year's production is better than the very poor 1975-76 performance (see Vol VI p 279) when 21 lakh tonnes were crushed and 1.96 lakh tonnes of sugar produced. Continuing their losses, the factories incurred a loss of Rs. 3 crores in 1975-76, with a little less loss expected in 1976-77. Due to unfavourable weather conditions, the recovery rate upto February 1977 was 8.29 per cent and upto March 8.43 per cent, against 9.1 per cent in February 1976. SIMA reports that during the period October 1, 1976-March 15, 1976, 25.14 lakh tonnes of cane was crushed and 2.12 lakh tonnes of sugar produced. The industry also faces the problem of insufficiency of cane and escalating costs and has asked government to raise levy prices and in the meanwhile postpone the collection of the cane cess and purchase tax. In the State there are 9 private units and in March one (the first) public sector factory was commissioned in Thanjavur under the Tamil Nadu Sugar Corporation and one more co-operative factory—the ninth—at Vellore, with a crushing capacity 1,250 tonnes. This increased the crushing capacity of the State from 31,500 tonnes to 32,700 tonnes per day.

TANSI :

TANSI reports that with an annual turnover of Rs. 11 crores, it will be breaking even in 1976-77. It is setting up a new company, Tamil Nadu Mopeds, to manufacture mopeds at Maraimalainagar near Chingleput at an estimated cost of Rs. 117 lakhs, to which IDBI is providing a credit of Rs. 45 lakhs. The demand for its first batch Mopeds was very encouraging, which in turn has led to this project which will turn out 20,000 vehicles at its peak. A second project announced is that in collaboration with HMT, to set up in the Ranipet (SIPCOT's) complex, a Rs. 70 lakh plant to manufacture power hacksaws and three types of drilling machines. A third project is centred in TANSI's glassware unit at Guindy where in collaboration with Eagle Vacuum Bottle company, Bombay double walled glass shells at the rate of 6,000 numbers per day will be manufactured. TANSI has also established a spirit based unit at Ambattur for the manufacture of furniture polish at an annual value of Rs. 15 lakhs to be increased later to Rs. 75 lakhs. It is also establishing a black granite unit from the mining lease it has from Kunnam at Chingleput. Its leather unit at Vannamangalam exports Rs. one crore of finished leather. Finally it announces that in collaboration with HMT a watch assembly plant is to be set up probably at Ooty.

TIDCO :

In mid April TIDCO announced the setting of a joint sector Rs. 11 crores project in Pudukottai to manufacture basic organic chemicals from alchohol in 3 phases. In the first phase acetic acid and acetic ancydride used in drugs and photo films will be produced. In the second phase 2 ethyl hexamol and acetone used in plasticides will be manufactured. In the third phase, mono chloro acetic acid, corboxy methyl cellulose used in tin cellulose will be fabricated. This is the first project of its kind in the State and is to be operated jointly with Sri Venkateswara Mills.

SIPCOT :

At SIPCOT's Ranipet Complex, a TIDCO–Asia Carbon, Rs. 4.74 crores, joint sector project is being set up to manufacture all kinds of carbon specialities such as cathode blocks and side plates, cathode parts, graphite blocks, refractory paste and electro–graphite brush blocks. At present the country's carbon product needs are being imported at a cost of Rs. 3.4 crores, so that this plant which will go on stream in 2 years will be an import substitution activity. Alloy Foundry is setting up a plant at a cost of Rs. 1.20 crores to manufacture all kinds of castings. At SIPCOT's Hosur complex, Lelun Private from Bangalore is setting up a project for the manufacture of polothelene sheets and blocks at a cost of Rs. 52.20 lakhs. Also Mysore electricals is setting up at Hosur a Rs. 78 lakh project for the manufacture of electric switch–gear, motor control gear and other accessories. SIPCOT reports that from its inception in January 1972 its term loans to 64 units have amounted to Rs. 567.46 lakhs and is attracting a number of entrepreneurs from outside the State.

Cement :

Cement production in the State will decline with the reimposition of the 25 per cent power cut from March on the industry. From October to February it had been given a lower cut at 15 per cent, as a result of which production in all factories was maintained at 85 per cent equivalent to 2.2 lakh tonnes a month. With the 25 per cent power cut, which increased in April to 40 per cent, production has fallen to 75 per cent of capacity, though exports will be maintained at 30,000 tonnes a month by the joint efforts of India Cements, Dalmia Cements and Tamil Nadu Cements.

Furfural :

Southern Agrifurane's furfural project at Mundiyambakkam, South Arcot has run into financing difficulties. An important import substitution project, the country's first furfural project using bagasse, used by chemical industries and refineries, it faces 2 problems. First it has had to find its finances from IDBI, ICICI, IFCI, after receiving assistance from commercial banks, on the instructions from RBI which it has done with some inevitable delay. It has also had to set up a Rs. 7 lakh pilot plant to establish its technology and process parameters. Meanwhile the project cost shot up from Rs. 2.10 crores to Rs. 4.23 crores, but the project was viable at even 45 per cent capacity. It needs bridge loans and as it was negotiating this with financial institutions, a foreign bank pulled out of its bridge loan. The company should be fully funded by the term lending institutions quickly, as in addition to meeting important domestic needs, several countries in South East Asia, Latin America and Africa are wanting to enter into collaboration

arrangements with it for developing similar facilities in their countries.

Chilling Plant and Sugar Beet Plant:

In March a Rs. 10 lakh chilling plant was commissioned in Dharmapuri with a capacity of 10,000 litres. Another similar plant with a 10,000 litre capacity is also being established at Hosur—as a fillip to the dairy development of these two backward districts. Also in March the first South Indian Sugar Beet diffuser Plant was commissioned at Palacode Sugar Mills as a means of promoting sugar beet cultivation in the district.

Handloom and Ready-Mades:

Handloom stocks have reached in March a high Rs. 25 crores in the State due to acute demand recession, drying up the cash flow and bank finance of the primary handloom weavers societies, which as a consequence have stopped working. Wages have not been paid to the workers in many societies for over a month and unemployment and under-employment in this area where 30 lakh persons are involved have reached serious proportions. The Union and State help of Rs. 4.75 crores to the apex society to pay its dues to the primary co-operatives has left untouched 75 per cent of the dire problem. The State government has been urged to give Rs. 10 crores to the Tamil Nadu Handloom Weavers Co-operative society so that it can procure the stocks from its 900 odd primary societies. Also the State has been urged to organise a fortnight handloom exhibition all over the State with a 25 per cent rebate to consumers to clear the stocks similar to the one in April in Madras city. The Madras Ready-made and Hosiery Dealers and Manufacturers Association face another kind of problem. Due to the 5 per cent single point tax on cotton hosiery and 8 per cent on non-cotton hosiery products for sales in the State, and 4 per cent tax in inter-State transactions, the State's ready-made garments and hosiery products are being priced out in other States, including our neighbouring States of Karnataka, Kerala and Andhra Pradesh. In Maharashtra, the dealers pay a multi-point tax of only 2.5 per cent and garments costing upto Rs. 20 are exempt from tax. In Delhi the multi-point tax is 4 per cent and garments costing Rs. 30 have no tax to pay. This with these 2 competitions, Tamil Nadu despite its textile mills, well established hosiery units, cheap and skilled labour is in a disadvantageous position. It is urgent that the sales tax in the State for garments be established at a uniform 3-4 per cent.

Leather:

Leather exports for the 11 months—April 1976 to February 1977—amounted to Rs. 270.34 crores, showing a rise of 67 per cent over the previous 11 month's Rs. 162.29 crores and for the 12 months was Rs. 313.36 crores compared to 1975-76 Rs. 234.25 crores. Exports of finished leather during this period was Rs. 92.28 crores (up 178 per cent from Rs. 33.16 crores) and of foot-wear components were Rs. 28.94 crores from Rs. 51 lakhs (466 per cent rise). Under these conditions, SIPCOT's readiness to finance setting up of leather units including those of technicians and entrepreneurs and repatriates should be used fully by the industry. At present those facilities are not being fully used. SIPCOT reports only one loan application from a leather unit. The financing of affluent treatment plants by the existing tanneries continues to be a deadlock between the government and the

industry. The plants are estimated to cost between Rs. 50,000 and Rs. 10 lakhs and given the pressures on the industry for modernisation and diversification, there is case for it to be assisted with soft loans with long maturity periods for setting up these plants. Further as effluent treatment is an essential social need and benefit, there is a case for arriving at an agreement with the industry on these soft loan arrangements.

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IV Education, Science and Health

Educational Reform :

The new education minister has raised three questions about the 10+2+3 pattern. One is about the syllabus of the 10 year School—whether in the 9th and 10th standard it is not overloaded. Part of the problem arises from the fact that we proceed by addition when we come to revise one of the syllabus. A second question related to the location of the +2 stage. As rural schools have few facilities, should there be flexibility in the location of the +2 allowing it to be located in some cases in colleges. The third question relates to +3 stage. In 8 of the northern States from West Bengal to Kashmir, the first degree is of only 2 years duration. On the other hand in all 9 States south of Rajasthan, the under graduate course is a 3 years course. Hence for some time the country will have 2 systems at the under-graduate level—a 2 year degree and a 3 year degree. But when it comes to the post-graduate course, all entrants should be required to have a 3 year course. At the +2 level, the Board of Higher Secondary Education in the State has circulated a draft syllabus prepared by 11 committees on languages and 21 committees on special subjects including vocational subjects for study and comment by the University and educationists. The State government in March and April made a series of decisions to help students from scheduled castes by exempting them from paying SSLC examination fees, providing them with more hostels and paying their book allowances in books and examination fees.

At a final curriculm renewal seminar organised in the State by SCERT, agreement was reached on instructional materials for a balanced functional curriculam to meet the physical, intellectual, aesthetic and vocational needs of primary school children. The project should in the first instance concentrate on the curricular needs of rural primary schools. At a UGC workshop at Hyderabad on the role of the English language in the universities, it was decided to concentrate on language skills rather than literature. For this a periodic review of the syllabic

and the academic programmes is necessary to keep the content of English language learning updated with the rate at which technology in this area is developing. It is necessary to relate English Language teaching to our particular social context. At the administrative level the State government is dealing with 2 issues concerning the salary payments to aided college teachers. One problem relates to applying the V Plan salary scales to college teachers and for this the problems of backward class reservation, all India recruitment and the approval of the selections by the university are under study by a committee. The other problem is that a number of private colleges, in the Madurai University area, have not been paying salaries to their teachers. Hence the government has sanctioned ad hoc advance grants to managements of private colleges to enable them to clear arrears of salary due to the teaching and non-teaching staff. 27 colleges had not paid salaries for 3 to 4 months to their teachers and in a few cases the arrears extend upto 6 or even 7 months. In addition government was also examining measures to streamline and improve the policy and procedures for assessment, audit and payment of grants to aided colleges so that they can pay teachers salaries promptly. The revised arrangements will come into effect from the next academic year. UGC has also liberalised its conditions of aid for women's colleges in regard to buildings, books, equipment and faculty improvement. A recent study on the eve of the examination in the city showed a rush for drugs of various kinds by students as part of allaying their anxiety in regard to the examinations. This is one more element that must be added to the scales against the present examination system and its harmful effect.

Radio :

AIR, Madras, will be introducing from April FM broadcast transmissions which will ensure noise free reception. Frequency moderation will be using a larger hand width and a different carrier frequency. It will therefore require a different type of receiver which will have to be made available to the listener. Some receivers can receive both AM and FM broadcasts, but in general new sets have to be manufactured to receive FM. The FM transmitter is similar to the TV transmitter and will be mounted on the same TV antenna at Chepauk. FM will give higher fidelity for music and orchestral programmes. AIR will be gradually expanding FM service to cater to all urban areas in the State, phasing the programme to keep and spread the cost over an adequate time period. Also the Madras TV station acquired in April an outside TV van which enables TV to provide live coverage to important events outside its studio.

Technical Education :

The curricula and syllabi of the diploma and degree courses in engineering are being reorganised to suit the new pattern of education in the State. The All India Council of Technical Education has recommended that the duration of the diploma course should be 10+3 and the degree course should be 10+4, reducing by one year each of the 2 courses. The possibilities of increasing the entry points, of allowing higher secondary candidates, diploma holders and science graduates entering the engineering degree course at appropriate levels and the replacement of the present uniform syllabi for all should be replaced by varying curricular offerings which will also enable candidates to move from one institution to another carrying

the credits he had earned—all these were the subject of study and discussion at one day seminar organised in mid April by the Tamil Nadu section of the Indian Society of Technical Education. Also an increase in part-time sandwich and non-formal education programmes were examined and recommended. IIT, Bombay has decided to offer the following five new courses from the coming academic year—a 4 year B. Tech., M.Sc. in computer science, M. Tech. in environmental science, M. Tech. in systems and control engineering and diploma in foundry technology. Under the Advanced Vocational Training Scheme being assisted by ILO (see Vol VI pp 28–29) the ITI at Ambattur has introduced a course on Indian Standards and Reading of Engineering Drawing. The State government announced in later April that it will not hold selection examinations for admission to professional colleges for the coming academic year. The Plan for a co-ordinated admission policy for all higher education in the date are therefore postponed.

Science :

CECRI reports the development of a phosphating jelly which can be used on the surface of steel structures for rust and scale removal. The process is now available for commercial application with NRDC. In fact, CSIR reports that a number of projects based on R and D developed at its national laboratories have come into commercial production. These include a space making system developed by NPL and installed at BHEL, Hardwar, based on used of solar energy. A special aluminium alloy conductor developed by NML is used as a substitute for copper in domestic and electric appliances and is being exported. Similarly a process know how for setting up a first low temperature carbonisations plant to produce smokeless domestic fuel has been developed at Singareni collieries and the engineering is being handled by EPC. MERADO, Madras has produced the technology with which automatic bottle washing machines are being produced. IOC's R and D department has developed a new superior kerosene wick stove on sale in petrol stations and other distribution centres in Delhi. This stove will save 3 lakh kilo litres of kerosene valued at Rs. 30 crores in foreign exchange and save the average household Rs. 8 a month. Its specially designed burner assembly ensures sootfree blue flame, complete combustion and the insulated outer burner causing the flame deflector to cut down heat wastage. The cost of the stove including taxes is Rs. 35. The Central Glass and Ceramic Research Institute, Calcutta reports two types of glass bonded mica to be used in switches, switch-gear etc. IIT, Guindy also announces development of a Fluid Energy Mill for NCDC for producing extremely few products. The Institute of Agricultural Research Statistics has established a computor centre in the Institute as a result of which it is hoped the current long time lag in publishing agricultural data and survey statistics can be considerably reduced. GSI announces that geological mapping of the entire country will be completed by 1985—which means that with the doubled outlay of Rs. 42 crores provided to it in the Fifth Plan, it will have to do in the next 10 years as much survey work as it has done in the last 100 years, with priority to investigation of manganese, chromite, kayanite and critical minerals. So far only 55 per cent of the country has been mapped. Now the rest, including the inaccessible areas will have to be surveyed. The Union government has accepted the proposal of WHO to

establish an international Management Centre for Monsoon Experiments (MONEX) in New Delhi. India will augment its existing observation net work and provide special observing by air crafts and ships. India and the Soviet Union had conducted a preliminary experiment ISMEX 73 and on this basis were planning a second joint experiment for studying the many problems of the monsoon phenomena during the coming monsoon. Indian Astrophysicists announced in early April discovery of a new satellite of the planet uranus in March which was completed by the American Scientists discovering a land of satellite rings.

Health :

A new National Institute of Health and Family Planning, which merges the National Institute of Family Planning and National Institute of Health Administration and Education was inaugurated in March as a means of integrating health and family planning, implementing the multi-purpose workers scheme and promoting the motivational and educational aspects of family planning. Given the great stakes of the country in its population problem, it is a matter of serious regret that due to the excesses committed and the inhuman actions in the Northern States, family planning has become a casualty in the course of the elections. In fact the new government has one of its first acts formulated a comprehensive rural health scheme in which family planning as a purely voluntary basis finds a place. This would meet the problem of the demoralised family planning workers in the Northern States. But the Health Scheme which was discussed and approved at a majority of State Health Ministers at the end of April is good and is execution of plans, including the Srivatsava report proposal discussed over the last 4 years. Under the scheme one voluntary health worker to be selected by each village panchayat will be trained at the PHC for a 3 month period—so that over 1½ years all the 5.8 lakh villages will have one trained worker, equipped with a medical kit (Rs. 600), and supervised by a medical health assistant, who will be under the Health specialist and ultimately under the PHC and regional hospital doctors. An announcement of the scheme was made at the end of April in the State along with a comprehensive school health plan to operate in 5 districts, in the State. The State government also announced in early April withdrawal of the family planning disincentives introduced in September 1977 (see Vol VII pp. 30–31). This is part of the new Union government's policy. In early April WHO organised a seminar in Colombo for Health Directors who are responsible for indigenous systems of medicine from 7 countries in South Asia in order to devise a system under traditional healers can overcome the gaps in the modern medical system. The system recommended fitting it into the national rural plan announced by the Union government—as referred to earlier. The All India Institute of Medical Science has received a gift of Rs. 1.50 crores of Swedish equipment for enhancing its health care activities, strengthening its diagnostic services, and making its Bio-statistics department self-sufficient in statistical analysis.

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V Employment

Unemployment, in terms of those registered with Employment Exchanges, has increased from 9.27 millions on October 31, 1976, an increase of 3.6 per cent. As at 31 December 1976, 51.08 lakhs of educated persons were registered in the Exchanges, 28 lakhs matrics, 12 lakhs PUCs, and 10 lakhs under-graduates and post-graduates. It is also estimated that they by 1980, 14,000 doctors will be unemployed, unless the natiional health plan is put into operation. The government reports that employment in the organised sector increased by 4.6 lakhs or 2.3 per cent in 1975-76, due mainly to the increase of 4.29 lakhs employed in the public sector indicating a growth rate for that sector of 3.3 per cent against 0.6 per cent in the private sector. The rise in the services sector which employs 2/5 of all workers was 2.8 per cent, followed by the manufacturing group which increased by 2.5 per cent. The northern and southern zones recorded the highest rate at 11.8 per cent, Orissa 9.1 per cent, Mizoram 8.3 per cent, Himachal Pradesh 7-8 per cent while it was lowest in Assam 2.6 per cent and Andhra Pradesh and Karnataka at 3 per cent. But even where industrial employment is shown to increase, during January-June 1975 the average daily employment stood at 5.66 million in 98,963 factories, in January-June 1974 it was 5.57 million in 93,795 factories,—it means that while there was an increase of 5.5 per cent in the number of factories, employment increased only by 1.7 per cent. This means that our industries are not labour intensive and are the capital intensive. The Labour Bureau announces that the third occupational wage survey will be completed by October. In the survey started in 1976, 81 industries from the manufacturing, mining and plantation sectors are covered compared to 44 covered in previous survey. So far 45 industries have been surveyed. The data can and should be used in formulating a national wage policy and to be of help to various wage boards. At last the previous Union government announced in early March its decision to use, the large foodgrain stocks to operate a scheme of additional rural employment, under which part of the wages, will be paid in foodgrains. To increase State's investment in rural works, the Union government under this scheme will make available agreed quantities of wheat and milo to the States without cost to be used on wages. The decision of the new government is awaited on this scheme. Meanwhile labour unrest has broken out all over the country—strikes, lockouts, gheraos in part as a reaction to the enforced quiet under the emergency. The State government sanctioned in March Rs. 19.79 lakhs to carry out works to provide employment to unemployed agricultural labourers as part of the drought relief operations. In Viralimalai and Annavasal Panchayat Unions of the Pudukottai district, 6 accelerated minor irrigation works at an estimated Rs. 80 lakhs have been sanctioned. Rs. 10 lakhs have been sanctioned as an additional allotment to Dharmapuri district for fair weather gravelled road works. Rs. 8 lakhs have been sanctioned for completion of road works taken up under fair weather gravelled road scheme in Ramanathapuram district and Rs. 95,000 for completing the works under the accelerated Minor Irrigation Programme. The regional Directorate of Workers Education, Madras has started a 6 month correspondence course in Tamil in trade

union organisation and administration. The course consists of 10 lessons and in each batch 100 to 150 active trade unionists from all over the State are to be enrolled. This is in addition to ongoing worker teacher training courses for 3 months, safety consciousness course for taxi and autorickshaw drivers, 3 day camps for rural workers. The Directorate has since its inception in 1960, trained 1,833 worker teachers who in turn have trained 83,400 workers at the plant level. The State government announces a progressive reduction in the number of industrial accidents since 1970—from 29,619 to 20,389 in 1975. The Bank of Baroda is running an interesting scheme of employing NCC cadets as bank workers during the vacation in Tamil Nadu and Andhra Pradesh. This should be extended to all public sector units.

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VI Other Items

Seventh Common Wealth Ministers Confrence and Comex 8 :

The Seventh Common Wealth Ministers of Education Conference was held in Accra, Ghana from March 14 to 19 on the theme "The Economics of Education." It was attended by 32 ministers of education of the Common Wealth Countries. There was general agreement that the major task facing Education in the countries is to deal with rural poverty and promote rural development. For this major objective, the emphasis should be on relevant and restructured primary education and all forms of non-formal education. It also recommended that given the rising costs of education and the fact that education budgets have reached a ceiling in most developing countries, there is need for careful study of the costs of education, using the unit costs techniques and means of mobilising all resources including that of the local community to meet the costs. One point repeatedly emphasised was the salary structure of the country which should have some relationship with the country's per capita GNP. Man power budgets should be used as indications of the direction of future educational development and the priority to be given to various sectors. The 8th Commonwealth visitors group came to India in March/April and visited Madras and the suburbs. Their accent was on understanding the culture and way of life of the people.

IUACE and IAEA and Literacy Campaign :

The Executive Committee of the Indian University Association for Continuing Education met in New Delhi in March. It reviewed the recently completed workshop on University extension programmes at Shillong which is referred to below.

and decided on publishing its proceedings in a monograph. It arranged for a seminar on colleges and continuing education at Jammu University and a workshop on legal clinics at the Bombay University. The Executive Committee of the Indian Adult Education Association was also held in March in New Delhi. It reviewed the results of the Dharmapuri workshop on Integrated Rural Development and finalised the plans for the similar workshops in Kerala and later at Uttar Pradesh and Assam. It also discussed the arrangements for the Annual conference and reviewed the first report from its programme committee to which it referred the programme and budget for 1977–78. Towards the end of April, the Union minister of Education called a small group together to discuss launching a national literacy programme. The meeting agreed that such a programme should be a national committee that it must be part of a wider package and that it must use the large governmental and voluntary agencies available.

Resources Centre:

The Resources Centre for Non-formal Education had its full staff appointed and 3 of the professional staff joining it. As a result of the recommendations of the Governing Council, as reported in the last issue p 231, the Union government has increased both the total budget of the Centre and its share (75 per cent) of the total Rs. 1.6 lakhs allotted to it. In April the Governing Council met to review the Centre's programme and re-order its budget. The Centre is working on developing curricula for the 42 centres running in Madras city and planning training programmes for the centres opened in the various blocks. On April 23, a seminar was held at the Centre for members of Tamil Nadu Board of Continuing Education from all over the State and the Joint Secretary in charge of Adult Education of the Union ministry of Education at which the function of the Centre for promoting training and curriculum development for the governmental and non-governmental programmes of Non-formal Education were decided upon.

India International Centre and UGC:

The Executive Committee of the India International Centre met at the Centre in Delhi, reviewed its financial status, the letting of its premises to the three bodies occupying them, and the membership status. It recommended an expansion in the executive committee and a new programme committee for the coming period. The UGC committee on professors going abroad under exchange agreements met in March and reviewed the 350 applications received for 100 visiting arrangements for 2 years that exist under the agreement. It recommended the names of 100 professors and lecturers who will be sent abroad during the coming two years. In mid April another UGC Committee met to establish the rules for sabbatical and study leave provisions for University teachers and college lecturers whereby senior teachers are to be given leave for 1 or 2 semesters to complete their research or manuscripts and others to pursue their research degrees.

Institute of Traditional Cultures and International Institute of Tamil Studies:

The first annual conference of the Institute of Traditional Cultures was held in March both as a means of publicising the work of the Institute which is now 15 years old and of securing more support of the specialists in the work of the Institute. There were lectures by experts on South East Asian political, social and cultural problems, some dance and music performances and an

exhibition on South East Asian Cultural products and forms. The Governing Board of the International Institute of Tamil Studies met in April and approved the Institute's budget for 1977-78 and made decisions on the programme of the Institute on the basis of the recommendations of its Scientific Council.

College Days:

In March, the AC College campus organised its annual day at which the work of its various student societies, including a society for seeking truth were presented. On this occasion the students presented to the chosen village of the college a good and large T.V. set as part of the non-formal education programme of the village. College days in March were also celebrated at KK College of Arts for Men, Namakkal. and A. A. College for Women, Namakkal. At the celebrations, the problems of semesterisation, the community and social service and the internal assessment system and some of the problems faced by the system of higher education for women were reviewed.

Endowment Lectures:

During March two Endowment Lectures were delivered by the Director. One was the UNESCO Thirtieth Anniversary lecture at the National Staff College, Delhi, at which UNESCO's contribution to Educational Planning and Administration was traced historically and evaluated. The second lecture was the Employees' Federation of Southern India endowment lecture at IIT, Guindy at which the relationship between Human Resources and Human Relations were analysed and five broad conclusions drawn.

Workers Education:

The Regional Directorate celebrated at the end of March a double event—the award of certificates to 120 worker teachers who had just completed a 3 month training course and the launching of a 6 month correspondence course for trade unions. On the occasion, the unique features of workers education—as being need based, as resulting in rewards and upgradation—were emphasised and a plea made for trade unions to take more of an interest in the five year planning process of the country.

North East Hill University:

As noted earlier, the North East Hill University, Shillong was host to a very good workshop of the IAUCE on University extension programmes. Its declaration at the end on the clientele of these programmes, the methods of planning and organising them and the important local and national results in improved employability and learning skills form a good guide for all University extension programmes. Also at the University, the North Eastern ICSSR Regional Centre was inaugurated to serve the social scientists of this much neglected region.

MIPMER:

In March, negotiations between the University and the State government for the creation of the Madras Institute of Post-Graduate Medical Education and Research (MIPMER) had reached a point when it was referred to the syndicate of the University which endorsed it. The proposed Institute will comprise an upgraded Madras Medical College complex with six new chairs and the University Institute of Post-Graduate Basic Medical Sciences, which will be co-ordinated and guided

by a Governing Council consisting of University personnel, medical scientists and the government. The Institute will *start with a subsidy of Rs. 6–10 crores* for equipping itself to be the fourth centre of its kind in the country.

World Conference on Philosophy in Max Muller Bhavan :

In early April, the World Conference on philosophy, culture and religion under the auspices of the Sankaracharya of Kancheepuram met in Madurai. It was a demonstration and an occasion for intellectual and spiritual agreement among persons from several countries and several religions on the unity of religions and the need to understand our varied philosophies and cultures. Towards the end of April there was a forum discussion organised in Max Muller Bhavan, Madras on the uneven status of the country's economy and its educational system. The need for getting the economy to move forward to meet the problems of poverty and unemployment and for restructuring the education system was established.

Technical Education and Krishna Pillay :

The Tamil Nadu section of the Indian Society of Technical Education organised a seminar in April at the College of Engineering, Guindy in order to examine the implications for polytechnic and undergraduate engineering education of the New pattern of 10+2. There was general agreement that the opportunity should be used to modernise the programme and forge close links with industry. Also in April there was the 150th birth anniversary celebrated of the Tamil Christian Poet, Krishna Pillay—In that 3 day seminar, his contribution and relevance to the present day problems of integrity and national character were stressed.

Indo-USSR Relations and UNESCO Manram :

In April the 30th anniversary of the establishment of diplomatic relations between India and USSR was celebrated at the Soviet Cultural Centre, Madras. The new *aiding political, economic and* cultural relations between the 2 countries and peoples were recalled and the need for their further development stressed. The UNESCO Manram in the State also celebrated its 7th anniversary and the need to promote such manrams in schools and colleges was agreed upon.

FICCI :

The 50th Annual meeting of the Federation of Indian Chambers of Commerce and Industry was held at the end of April in New Delhi. The new government—the Prime Minister and other ministers indicated the short term (keeping down prices) and long term (producing goods of mass consumption) role that the government expected of the business world. One of the sessions was devoted to the perspectives for the Sixth Plan and the need to ensure a 15 per cent rate of real increase in *investment during that Plan* period was stressed.

Vth Plan Scales and Vice-Chancellors :

The Committee set up by the government to examine the salary scales for the staff of official colleges composed most of its work in April. The financial implications have to be worked out and this will be done by mid May. The first meeting of the Vice-Chancellors of the State was organised in early April in Madurai at which the policies and

procedures of the Universities were reviewed and procedures for co-ordination were agreed upon.

University Events:

During March and April the main University events included a national seminar on Oriental Entomology which brought together some 100 entomologists to discuss and agree upon a programme of research to meet the country's agricultural, veterinary and forestry problems. A UGC sponsored seminar on Hyperbolic complex Analysis was organised by the Ramanujam Institute of Advanced Centre in Mathematics at which 50 mathematicians from the country discussed and exchanged views on this major new research area. There was also a 6 week Institute for college teachers on cytology and a summer Institute started for English learning teachers. During the month, the University/UGC advisory committee on the Advanced Centres in Botany and Mathematics and the Special Assistance centre in Physical Chemistry were held and the work of the Centres reviewed and their future plans agreed upon. There was the usual supplementa convocation held on March 24th when 100 graduates were awarded their diplomas. The Academic Council met in early March and approved the restructured syllabi of the various courses. The Syndicate met in the third week of March to approve the arrangements of the senate and the plans for Indian Medicine and MIPMER and at the end of April to review and decide on the next year's academic programme and arrangements and affiliations. The Senate met at the end of the month and approved the programme and budget for 1977–78, endorsed the quinquennial report to the State government and the Syndicate's Annual Report for 1976. It was followed by the meeting of Principals who reviewed the functioning of the semester programme, the under graduate review commission and the internal assessment system. In April there was the second meeting of the undergraduate review commission when the hours were allocated for the various courses. Also in April inspection commissions visited colleges with regard to their requests for retrenchment of staff and for the development for post-graduate studies. March also saw the launching of the autonomous status of the post-graduate centres at Thiruchirapalli and Coimbatore.

Governing Council, MIDS:

1977/I/1 **Attendance and Agenda**: The first meeting of the Governing Council of the re-organised Madras Institute of Development Studies was held in the Seminar Room of the Institute on Monday, 21st March 1977 at 3.00 p.m. with the following members:

1. Dr. Malcolm S. Adiseshiah (Chairman)
2. ICSSR Representatives:
   (i) The Member-Secretary—Mr. J. P. Naik.
   (ii) Director of the Southern Regional Centre, Hyderabad, Dr. G. Ram Reddy.
3. Representatives of Universities:
   (i) Dr. R. P. Misra (Mysore University)

(ii) Dr. S. Venkataratnam (Madurai University)

(iii) Dr. P.B.K. Nayar, (Kerala University)

(iv) Dr. G. Ram Reddy (Osmania University)

4. Trustees:
(i) Mrs. Malcolm S. Adiseshiah
(ii) Mr. M. S. Appa Rao.
(iii) Mr. M. N. Rao.

5. Social Scientists: Dr. M. N. Srinivas (Institute of Social and Economic Change)

6. Director–Designate: Dr. C. T. Kurien, (Member–Secretary)

Apologies for Absence:

Representatives of the Government of Tamil Nadu:

(i) Mr. S. Guhan, Secretary, Finance Department.

(ii) Mr. C. G. Rangabashyam, commissioner & Secretary, Education Department.

Social Scientists: Dr. K. N. Raj, Centre for Development Studies, Trivandrum.

Agenda : (Doc. I/GC/I) :

The following Agenda was adopted:—

(1) Sixth Annual Report of the Institute

(2) Audited Accounts for 1975–76.

(3) Programme and Budget for 1977–78.

(4) Proposed Plan of Activities 1978–79 to 1983-84.

(5) Rules and Regulations of the Institute.

(6) Appointment of Committees:
(i) Selection Committee.
(ii) Executive Council.

(7) Other Business:
(i) Budget for 1976–77.
(ii) Appointment of Director and terms of his service.
(iii) Other appointments.
(iv) Next meeting.

1977/1/2 : Sixth Annual Report of the Institute (Doc. 1/GC/2) :

Dr. Adiseshiah in his capacity as Director of the Institute presented the Sixth Annual Report. It was pointed out that the Annual Report covers the period of 15 months as the Institute had so far worked on the basis of calendar year from January–December, but would now function on the basis of the financial year April to March so that the Sixth Annual Report covers the period from January 1976 to March 1977. There was a discussion and on the basis of that the Council decided that the report which gave the picture of the work of the Institute from its inception in 1971 upto the present should be elaborated and published and circulated among bodies related to the Institute and others into State. The Council also adopted the following resolution :

1977/1/2-A :

The Governing Council recounts with great appreciation the philanthrophic motives of the founder trustees, Dr. M. S. Adiseshiah and Mrs. Elizabeth Adiseshiah and their generous contributions in the form of building, books, finance and other assets on the basis of which the Institute was founded in 1971. The Council notes with great satisfaction that the Institute has, in the short period, become a recognised centre of research and studies relating to development problems with special reference to Tamil Nadu. The Council places on record its profound gratitude to the trustees for their noble and exemplary gesture in now donating the entire assets of the Institute to the reconstituted National Institute and for their promise of further financial support to the Institute.

1977/1/3 : Audited Accounts for 1975-76 (Doc. 1/GC/3) :

The audited accounts for 1975–76 and the Balance Sheet as on 31st March 1976 were presented to the Council. There was a discussion on the manner in which the assets were to be shown in the Balance Sheet. The question was whether the assets should be shown in terms of the original market value as depreciated or in terms of current market value. As this raised questions of a legal and accounting nature, it was decided that further consultation should be held on the matter and the policy should be decided at the next meeting of the Council.

1977/1/3-A :

The Council approved the statement of income and expenditure for the financial year 1975–76 and the balance sheet as on 31st March 1976.

1977/1/4 : Programme and Budget for 1977-78 (Doc. 1/GC/4) :

The Director introduced the programme and budget for 1977–78. In the discussion it was pointed out that the programme outlined in the document referred only to the transitional year 1977–78 and that many policy matters of a long–term nature such as the periodicity of the Bulletin, publication arrangements etc. would have to be re–examined after that period.

1977/1/4-A :

The Council approved the programme and budget for 1977-78. The Council was informed that the building programme which was to be undertaken during the financial year 1976–77 could not be taken up because necessary permission for construction work was not issued,

under the new Urban Land Ceiling Act. It was pointed out that on account of this, the amount that the ICSSR had budgetted for construction work in 1976-77 had lapsed and would have to be provided for in 1977–78. It was also agreed to explore the possibilities of purchasing the property adjacent to the Institute and to budget for it in the financial year 1977–78 anticipating a grant for this purpose from the ICSSR

The Council passed the following resolutions:

1977/1/4-B :

The Governing Council notes with concern that the expansion of the Institute building which should have commenced in 1976–77 could not be undertaken because the exemption required under the Urban Land Ceiling Act, applied for by the Institute, has not yet been issued by the Revenue Department of the Tamil Nadu Government.

The Council requests the Tamil Nadu Government to issue the necessary order so that construction work can commence without further delay and authorises Mr. M. S. Appa Rao to wait on the Government in this matter.

1977/1/5 proposed Plan of Activities of 1978-79 to 1983-84 (Doc. I/GC/5) :

The Plan was presented. The following the comments were made:

(i) to add under Item E "The Institute will also continue the annual meeting of the Heads of Departments of Social Sciences of the Universities of South India in collaboration with the Southern Regional Centre of the ICSSR."

(ii) to indicate that the Institute will also house the State Unit of the ICSSR to be set up.

(iii) to note that the Institute may be called upon to take up research projects on behalf of the State and Central Governments, the ICSSR and other Agencies and to budget the time of the faculty for such project work.

(iv) to indicate in the financial statement non–recurring expenditure of about Rs. 15 lakhs over the period.

1977/1/5-A :

The Council approved the proposed plan of activities for 1978–79 to 1983–84 with the staffing pattern and salary scales, and financial implications following therefrom. This document will also be forwarded to the ICSSR as the first step in the decisions regarding the allocation of grants to the Institute under the Sixth Five Year Plan.

1977/1/6 Rules and Regulations of the Institute (Doc. I/GC/6) :

The Rules and Regulations of the Institute were placed before the Council.

The Council made the following modifications:

(i) Service Rules Section IV Sub-section B No. 5 retirement Clause 8 to be changed as follows : "The age of retirement of the members of the academic, administrative and other staff in permanent whole time service shall be the completion of the age of 60. Academic staff may be given superannuation contracts up to the age of 65 with each contract not exceeding 2 years.

(ii) Service Rules Section V Sub-Section B No. 1, the first clause to be modified as follows: "For purpose of leave rules, employees other than professors, fellows, research associates and research assistants shall be considered as non-academic."

(iii) Service Rules Section VII to be changed as follows: "Permanent members of the Institute shall be eligible for contributory provident fund and gratuity."

1977/I/6-A :

The Council adopted the Rules with the above modifications.

The Member-Secretary of the ICSSR offered to have the rules studied by their legal adviser and to bring to the Council's next meeting any resulting suggestions.

1977/I/7 Appointment of Committees (Doc. I/GC/7) :

The Council decided:

1977/I/7-A :

Appointments to the post of professors, fellows, research associates, administrative officer and librarian will be decided by the Governing Council on the recommendation of the Selection Committee. All other appointments will be made by the Director advised by the internal Appointment Committee and reported to the Governing Council.

1977/I/7-B :

All posts will be advertised, but in the case of professors and fellows the Selection Committee will also have the freedom to negotiate and invite qualified persons.

1977/I/7-C :

The Council approved the Selection Committee consisting of the following:

(i) Dr. Malcolm S. Adisesiah (Chairman).

(ii) Representative of the ICSSR— Mr. J. P. Naik.

(iii) Representative of the Government of Tamil Nadu— Mr. C. G. Rangabashyam.

(iv) Dr. M. N. Srinivas.

(v) Dr. C. T. Kurien, Director-Designate (Member-Secretary).

1977/I/7-D :

The Council also suggested that in the case of appointment of academic personnel the Selection Committee may be advised by two experts.

1977/I/7-E :

The Council approved the following to constitute the Executive Council:

(i) Dr. Malcolm S. Adiseshiah (Chairman.)

(ii) Representative of the ICSSR— Mr. J. P. Naik.

(iii) Representative of the Government of Tamil Nadu— Mr. S. Guhan.

(iv) Trustees: Mr. M. S. Appa Rao

(v) Dr. R. P. Misra.

(vi) Dr. C. T. Kurien, Director-Designate (Member-Secretary)

1977/I/8: Other Business (Doc. I/GC/8):

1977/I/8-A:

The Council approved the revised budget estimate for 1976–77 as appended.

1977/I/8-B:

The Council offered Dr. C. T. Kurien a permanent appointment as Professor of the Institute from 1-6-1978 and appointed him also as Director of the Institute for a period of five years from 1-6-1978.

The Council decided that Dr. Kurien's salary would be Rs. 2,000/– p.m. in the scale of Professor of the Institute plus the usual allowances, with a monthly travelling allowance of Rs. 300 during his period as Director. It also authorised the provision of a telephone by the Institute in the Director – Designate's residence as from 1–4–1977 involving a deposit of Rs. 1,000/– and a quarterly rental of Rs. 150/–.

1977/I/8-C:

The Council appointed Mr. C. L. Narasimhan as a Research Associate with a starting salary of Rs. 1,100/–p.m. and allowances as from 1–1–1977.

1977/I/8-D:

The Council decided that appointments made by the Selection Committee will be on the basis of the salary scales provided for 1978–79 to 1983–84 period (as provided in Doc. I/GC/5). Short-term appointments for the financial year 1977–78 will be on the basis of the existing designation and salaries.

Next Meeting of the Council:

The Council decided that it may have a meeting along with the ICSSR visiting committee to work out final details regarding the Sixth Plan allocations.

The meeting adjourned with a vote of thanks to the Chair.

April Development Seminar:

The paper for the April session of the Madras Development seminar, " Educational Perspective " by Mr. B. Ardhanareeswaran, Assistant Professor, Gurunanak College, Madras together with a summary of discussion on the paper at the Seminar chaired by Mr. K. R. Sundaresan, Secretary, Madras Adult Education Association appears as the first article.

Second Article:

The annual report of the Madras Institute of Development Studies for the period January 1976–March 1977 presented to the Institute's Governing Council appears as the second article.

Special Section:

The results of the Seventh Social Science Research Survey in Tamil Nadu conducted by the Institute appears as the special section of the issue.

EDUCATIONAL PERSPECTIVES

By

B. ARDHANAREESWARAN

Madras.

The Prologomena :

In many developing countries almost 50% (in some even more) of the population is under 16 years of age. These young people will constitute the major portion of the world's adult population in the next two and a half crucial decades; their reproductive behaviour, according to John Edlefsen[1], will be of central importance to the efforts to control the rate of population growth.

The parameters of 'medium sets of demographic projections' (as recommended by India's Registrar - General) indicate that population will grow to 945 millions by the turn of the century. What with the magnitude of the population problem, no country can afford not to utilize one of its best resources, the education system, in helping solve the problem.

TABLE 1

DEMOGRAPHIC TRENDS (COMPARATIVE) FROM THE WORLD ALMANAE OF 1976

Continent	Area in Sq. Miles	% of Earth	Population estimated	% of World's Total
1. Asia	16,988,000	29.5	2,316,312,000	58.4
2. Africa	11,506,000	20.0	401,000,000	10.1
3. North America	9,390,000	16.3	342,700,000	8.6
4. South America	6,795,000	11.8	219,000,000	5.5
5. Europe	3,745,000	6.5	660,313,000	16.6
6. Australia	2,968,000	5.2	13,800,000	0.3
7. Antartica	5,500,000	9.6	—	—

1. John Edlefsen was Population Adviser to the Colombo Plan Region

TABLE 2

As per the Readers Digest year book of 1975 the population statistics for a few nations of the world are given below:

NATIONS OF THE WORLD: LOCATION, AREA, POPULATION

Nations of the world	Location	Area in sq. miles	Population Total	Density sq. miles	Distribution Urban	Rural
1. Australia	South Pacific	2,967,909	13,467,400	4.5	85.7%	14.3%
2. Bangaladesh	Asia	55,126	69,087,000	1,253.3	N.A.	—
3. Britain	Europe	94,500	56,235,500	595.1	78.3	21.3
4. Canada	North America	3,851,809	22,646,200	5.9	76.1	23.9
5. Central African Republic	Africa	240,534	1,747,400	7.3	26.6	73.4
6. China	Asia	3,691,502	830,453,000	225.0	14.0	86.0
7. Egypt	Africa	386,700	36,754,300	95.0	42.9	57.1
8. India	Asia	1,178,995	587,503,700	498.3	20.2	79.8
9. Japan	Asia	143,689	108,152,900	752.7	72.2	27.8
10. Pakistan	Asia	310,403	64,900,000	209.1	13.1	86.9
11. Singapore	S. E. Asia	225	2,239,100	9,951.6	100.0	0.0
12. South Africa	Africa	471,445	24,210,000	51.4	47.9	52.1
13. Soviet Union	Europe Asia	8,649,489	253,268,300	29.3	58.3	41.7
14. United States	North America	3,615,212	212,031,000	58.5	73.5	26.5

TABLE 3

POPULATION IN INDIA AND TAMILNADU AS PER 1971 CENSUS

Population in decades	India	Tamil Nadu
1901	230 millions	19 millions
1911	250 ,,	21 ,,
1921	250 ,,	22 ,,
1931	270 ,,	23 ,,
1941	310 ,,	26 ,,
1951	360 ,,	30 ,,
1961	430 ,,	34 ,,
1971	540 ,,	41 ,,
1975	587 ,,	45 ,,

Development vis-a-vis demographic situation:

Probably the best contraceptive is education which develops an awareness of the population problem among the world's young people because they will become the parents of the next century and hence should be made aware of the magnitude of the population problem and educated to recognize that a small family is not only proper highly desirable and easily obtainable. The following sums up the policy advocated by India at the World Population Conference*:-

> "The need is to adopt an integrated approach encompassing the entire eco-system and covering the man-environment relationship in such a way that every human being born on this planet is assured of the national, intellectual and spiritual inputs necessary for the full flowering of human personality . . . . . ."

India became the second Colombo Plan nation[2], to officially endorse a national programme of 'population education'. The economical and sociological implications of the population growth have to be brought home to the mass of the people[3]. Mere publicity drive for the family planning programme is not enough, since in India we have sizable unemployment, underemployment and 'unemployability'.

Population Materials for curricula:

An attempt can be made to make children of primary classes (of, say, eight years of age) understand the rate of population increase, and the birth and death rates in their country. In the higher grades, they can be given comparative information and led to a general understanding of world trends. Subjects like geography, civics, history, home-economics, biology, and problems in Arithmetic can little by little effect this exposure to population dynamics, so that each pupil will have an appreciation of his or her roles and responsibilities as consumers and as political producers in a complex society.

Concomitantly, each boy or girl must be enabled to understand the processes of human reproduction. It is just normal for children to manifest at an early age an interest in these processes and to respond favourably when exposed to factual 'presentations' by well-trained teachers. Such instruction is possible in Science within its curricular setting: the material should be introduced "naturally into the normal sequence" and should be appropriate to the age and maturity of the pupils.

Students of upper-level secondary school and college do need to know about the purpose of local family planning clinics, so that they will be anxious to take advantage of such facilities after they are married. Adequate diet, the relationships between malnutrition and disease, personal hygiene, family and community sanitation responsibilities will also form part of the instruction.

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*Held at Bucharest, Romania, in August 1974

2 Japan was the first nation

3 One of the first few to 'speak out' thus was Dr. Sloan Wayland of Teacher's College, Columbia University.

Such instruction will drive home to the students the point that with a given level of resources and earning power, the larger the family the smaller the share per child. In farm families, particularly in developing countries, small landholdings become even smaller (generation after generation). Once the pupil becomes aware of this, he *can extend this analytical technique* to his community, his nation and to the world as a whole. This will lead him to the realization of the world's major politico–economic problems through which international co-operation could be built[4].

Thus if population awareness materials are integrated into text books by population–educators and curriculum–writers population education will in a few years be an integrated part of the curricula.

Available literate persons in the village *including retired officials and unemployed* educated persons could be pressed into service for imparting education, particularly population education, on a non-formal basis.

Research in the different aspects of teacher–training for population education including training of personnel for non-formal education deserves top priority.

Women's Education

Our Indian literacy among women during 1900 to 1920 was only 1.8%which *increased to* 9.4% in 1950—a very slow progress indeed for 30 years. As per 1961 statistics the women's literacy percentage was 15.3% and per 1971 statistics, 18.44%. By mid–September 1975[5] there were about 800 million illiterates in the world, which made up a third of the world's adult population, of this, female illiterates constituted 60%. The percentage of male illiterates to the total population for Tamil Nadu was 48.23% and female illiterates 73.14%.

All our concentration has to be directed towards 11–14 age group, in which wastage occurs. Here Family Planning *has a crucial role to play*. If the mother is not burdened with many children, she will not insist on her growing daughter to stay at home and look after the babies. As the Tamil Nadu Perspective Plan for Education, Science and Technology has suggested, the rate of wastage in the girls' school performance should be reduced through

i) functionalisation of their school curricula

ii) the *provision of additional* quarters for women teachers in rural areas

and iii) the free distribution of clothes to girl pupils.

Pre-School / Early Childhood education:

The demographic situation aggravates the problem of lack of food and other resources indispensable to life. Children in pre-school age are the ones who most endure the effects of the lack of deficiency. Early childhood education is now invariably left in charge of mothers who themselves urgently require an all-round developmental education, that is, *education in the areas of* health, nutrition co–operativeness, cultural understanding,

4 Dr. Philip M. Hauser, 1963

5 Report by Mr. Mahtar M'Bhow, Unesco Director General

etc. This has been the cause of several mothers not being always the best teachers.

Mother involvement scheme: Brazilian model:

A Brazilian doctor Yaro R. Gandra has found an alternative solution to the problem of the absence of a sufficient net work of schools for all children from birth to 6 years of age. This model will be suited to the genius and tradition of our country and will incidentally provide non-formal education to the mother. Dr. Gandra uses the existing elementary schools and canteens, with their school personnel and a few additional trained teachers, to help mothers with their very young children. Transport problems are solved because older brothers and sisters already attending elementary school and bring the children with them. Each mother attends the school once or twice each month for a programme of training in hygiene, cookery, recreational activities including songs, puppets and other games and crafts using cheap materials.

It is said that this programme is run successfully and the results are encouraging, that it can be operated within limited funds, and that it is already being tried in Bolivia and Columbia. One would wish that it be adopted in India too.

Seriousness of the problem:

The sprouting of nursery or kindergarten schools like mushroom almost everywhere including rural places is disturbing. No doubt the poor man succumbs to the lure of this school because he wants his ward to have the benefit of the English brand of education. Many of these schools provide no proper play-facilities, drinking water, eating place or lavatory; they huddle children together in a small space and make them squat in unhygienic conditions. But they collect fantastically high fees and do so for 12 months for an eight-month school term; they collect special fees like building fund, excursion, magic, circus, TV, compulsory tuition and what not. These are notable exceptions, a few good schools being conducted along desirable educational lines with the help of qualified teachers. But the majority of Montessori/KG/nursery/day-care schools are in need of guidance and co-ordination regarding standards to be set, requisite qualifications of teachers, minimum facilities for children, etc.

My thesis is that because childred are mishandled during the period of early childhood education, they are exposed to a premature rigid distasteful atmosphere, to learning the 3 R's and they are taught to the point of monotony and boredom the same thing over and over again from about 2½ years to 7 years of age. We witness the malady of students' utter indifference and maladjustment to and revolt against discipline when they come to the higher stages of education, and apathy for studying prescribed and other books in English and other disciplines.

Need for Board of Early Childhood Education:

A Board for Early Childhood Education could be constituted along the lines of the Tamil Nadu Board of Continuing Education. Members of the Board could comprise representatives of the relevant disciplines—teaching, medical, psychological, social work, etc. The State Government could involve itself by providing funds for specific projects

recommended by the Board and by placing at the disposal of the Board specialist services in education, health, and social welfare. The Board has a vital role to play in identifying and assessing individual child's weakness so that suitable corrective and preventive measures can be taken. Early childhood education has a very important role as the first and most effective time to meet the needs of the handicapped.[6]

Universal primary schooling :

The educational policy of the Government[7] accords the highest priority to universalisation of elmentary education and promotion of adult literacy and seeks to reduce the gap between the "world of work and world fo education". The Central Government proposes to take the earliest opportunity to prepare a time-bound plan of action for universalising elementary education and promotion of adult literacy. The constraints in achieving the goal of universal primary education are multi dimensional and inter-related. The first and foremost constraint is economic. (1) Many children do not attend school because of poverty. (2) Then there is the socio – educo – cultural constraint: The percentage of enrolement of children is directly related to the literacy percentage of the community. The cultural attainment of a society is reflected in the educational development; hence lack of cultural acts as a constraint on education. (3) The power of educational institutions for attracting and holding children has to be increased to reduce wastage and stagnation.

Tamil Nadu has an elementary school within a mile's radius of every village with a population of 300 and above. The headquarters and field structure of the Directorate of School Education has planned and operated the midday meal programme for 31,000 schools in the State[8].

"Educational wastage is a compound of dropping out plus repetition." In 1957-58, 8.74 lakh students entered standard I and it is revealing to trace in the Table[9] below what happened to this generation of students who graduated in June 1972:—

6 John McKenzie, New Zealand Educationist at Berlin Conference on Early Childhood Education, 1975.

7 Union Education Minister Dr. P. C. Chander's statement to Parliament on Apr. 5, 1977 (The Hindu dated 6-4-1977 page 6)

8 "Towards a Learning Society", p. 4

9 "Towards A Learning Sociecy" p. 5

TABLE 4

TABLULAR SUMMARY OF STUDENT CAREER 1957—72.

Year (1)	tandard (2)	Number of students enrolled in lakhs. (3)
1957–58	I	8.74
1961–62	V	4.22
1964–65	VIII	2.54
1967–68	XI	1.66
July 1968	P.U.C.	0.59
July 1968	Teacher training and other post S.S.L.C. Courses	0.20
1972	B.A., BSc., B.Com. (graduation)	0.24
....	re–appearances.	+0.08

There is a particular problem of wastage in girls' education in the State at the elementary level, as shown in the following table[10] :-

TABLE 5

ELEMENTARY EDUCATION (GIRLS) WASTAGE STADANRD I-V.

Year (1)	Strength of girls in Std. I (2)	Year (3)	Strength of girls in Std. V (4)	Percentage (5)	Wastage (6)
1958–59	3,80,406	1962–63	1,60,860	42.28	57.72
1959–60	4,08,405	1963–64	1,76,157	43.13	56.87
1960–61	4,34,058	1964–65	2,01,205	46.35	53.65
1961–62	5,35,005	1965–66	2,21,304	41.36	58.64
1962–63	5,83,054	1966–67	2,32,096	39.80	60.20
1963–64	6,08,567	1967–68	2,43,858	40.13	59.87
1964–65	5,81,118	1968–69	2,66,279	45.10	54.90
1965–66	5,67,327	1969–70	2,71,242	48.24	51.76
1966–67	5,85,665	1970–71	2,83,939	48.55	51.45

10 "Towards A Learning Society", p. 6

Non-formal Education :

Education should be made 'life-long' and 'life-oriented'. It should not be confined to the formal system only. The idea of non-formal education has been gaining ground in India. Its urgency and importance was recognised at the national level in November 1974 when the Central Advisory Board of Education decided to encourage it by giving it priority in the matter of finance. The following are some of the Boards' recommendations:

(i) *Non-formal education programmes* should be correlated with the developmental objectives. In particular, it should be an essential input of programmes, the successful implementation of which depends on well informed participants.

(ii) Greatest care should be taken to make the content of non-formal education programmes related to environmental and learner's needs.

(iii) In the organization of non-formal education programmes there is need for a much greater involvement of student and non-student youth organizations as well as the concerned departments of Government. Voluntary agencies must also be *involved in a big way in* implementation of this programme. Suitable arrangements of co-ordination should be made at the national, State and implementation levels.

The CABE also recommended the setting up of a cell in each State to co-ordinate all the non-formal education programmes. Tamil Nadu is the first State to have a separate Director of Non-formal education.

The course designed by the Tamil Nadu Board of Continuing Education for the participants of the San Thome Project includes functional Tamil, functional English, general maths, practical geometry, applied science, engineering, drawing and *citizenship. The end behaviour for each* subject is described in terms, not of the facts learnt or the books read but of the use the students will be able to make of these in real life situations and hence of the skills they will acquire.

'A neglected University Responsibility' :

Relying but little on the 'dysfunctional formal education system, farmers, businessmen, industrialists and other employers have developed their own employee-training systems; these could very well benefit by research findings of professional educators; at the same time the formal educational processes could become more mature and adult by studying the informal empirical systems. This could establish a meaningful 'communication' between higher education and the community. The question should rather be "What can educational institutions learn from the community?" than "What can education offer to the community?" The transformation of Universities into institutions not for, but of 'education permanente' is quite inescapable". The University is therefore inconceivable outside the framework of life-long life-oriented integrated education.

The first step taken *towards this goal* is the evening colleges. Now the participants of courses in these colleges also

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11 Des Commissions Inter-grandes de Nancy Eioles Report, 1968 quoted by Dr. Malcolm S. Adiseshiah 1970.

could undergo the course for the duration of regular courses but with an increase in the number of working days.

The correspondence courses are nearest the concept of non-formal education. They are offered by the University of Madurai in Tamil Nadu, Mysore, Sri Venkateswara, Patna, Rajasthan, Meerut, Delhi, Punjab, Punjabi, Himachal Pradesh, the Central Institute of English, and the Directorate of Hindi of the Government of India. Full recognition is being given to it by the University of Madras. If every University follows suit, the courses will become more popular. Further strengthening of these courses must be done through periodic contact classes, tutorials and lessons through the Radio. Language laboratories must be set up to give the participants lessons in spoken language; this is particularly necessary as oral face-to-face communication is not there in these courses. There ought to be good library catering for these courses at various places in the State, to begin with, the District Head quarters, with the facility of making it mobile.

The Universities of Tamil Nadu may start planning for helping the bonafide teacher candidates appearing for the various examinations after private study. The Universities may identify and officially recognize well-equipped and efficient tutorial colleges and also authorise some colleges to run evening courses for failed candidates.

Any graduate who wishes to offer privately any subject taught at the University may be permitted to acquire the additional qualification.

Para Degree & Refresher courses[12]:

Manpower is required in the fields of advertising, agency work, autioneering, Adult Education, Estate Management (rural and urban) Security and Clearing, Estimation, Design, Packaging, Entertainment Services, Public Relations, Tourism, Child Care, Data-Processing, Hospital Management, Horology, Taxidermy, and so on. Over two hundred such fields require Graduates with qualification in these areas. The University of Madras and a few others have been thinking of projecting para-graduate Diplomas either as evening courses or as short courses to cover this need. In that context a Council of Industry and trade has been set up with the help of captains of Industry and Trade to formulate the syllabi, the training and examination for such courses to be conducted by the University Department of Continuing Education.

With the vast pace of growth of modern knowledge, what we have learned when we graduated becomes out of date soon. I shudder to think the fate of graduates if instead of awarding the Degrees for life, we institute the rule that a Graduate must pass the Exams for a Degree once in five years. We would have a much thinner Registered Graduates list.

At present there are refresher courses which are limited to Teachers only. It appears to me that there is an obligation on the part of the University to conduct short Courses to those Alumni who wish to make their knowledge uptodate. This will help the Graduates to continue to have their intellectual growth uptodate.

12 These points are from a paper prepared by Mr. G. A. Dharmaraj, (Students' Adviser, University of Madras) for the Madras University Committee on non-formal education.

There are also special courses to be designed for parents, workers, physically handicapped, and other categories for specific purposes. These courses also come under the category of Non–formal education.

Again in a Graduate one looks for a certain Social Responsibility, Civic Consciousness, Personal and environmental Hygiene, an elementary knowledge of law, Indian and Regional Culture and a host of subjects which enhance the value of the graduate. This polishing of the graduate could only be done through courses and training under non–formal education. Our obsession and loading of faculties has left no time for such embellishments and needs of an educated man.

Table 6

PERCENTAGE OF LITERATES TO TOTAL POPULATION

State/Revenue District	Percentage of Literates to Total Population 1961 Persons	1961 Males	1961 Females	1971 Persons	1971 Males	1971 Females
Tamil Nadu	31.31	44.54	18.17	39.45	51.77	26.86
Madras	59.47	69.61	48.22	62.01	70.58	52.50
Chingleput	27.89	40.21	15.06	39.7	51.7	27.02
North Arcot	24.72	37.12	12.19	34.66	47.55	21.39
South Arcot	26.71	40.55	10.65	31.13	44.06	17.8
Dharmapuri	15.70	23.68	7.46	22.31	31.66	12.60
Salem	22.14	32.75	11.35	31.7	42.67	20.32
Coimbatore	30.20	43.28	16.66	38.89	51.32	25.9
The Nligiris	35.68	48.27	21.92	47.03	58.48	34.9
Madurai	33.38	48.12	18.62	41.51	55.06	27.76
Tiruchirapalli	29.93	44.69	15.30	37.5	51.21	23.67
Thanjavur	33.55	48.67	18.65	39.6	53.09	26.13
Ramanathapuram	32.11	48.34	16.79	39.7	54.71	25.37
Tirunelveli	36.38	49.99	23.46	44.83	57.13	33.02
Kanyakumari	48.57	56.24	40.73	58.21	64.11	52.13

Source: Unpublished data from D. P. I., Madras

The Perspective Plan for Education for Tamil Nadu assigns to school and adult education the aim (among others) of equalising educational opportunities and attainments. It is set forth thus: [13]

"In each rural school, one additional teacher will be appointed to organise with the help of other teachers, out-of-school, education programmes, thus providing the equivalent of 4 years of schooling to the 52% of children who are stagnating or have dropped out of school for work at home, field or factory. The school hours and working days will be fitted into the non-busy season in each rural area. The staffing proposed for this programme will involve redevelopment of the existing teaching force in such a manner that 2,500 teachers will form the out-of-school teaching force. They will moreover be so posted that 2,500 schools in the most backward areas of the State will have one additional teacher each. For the other schools, existing teachers, apprentice teachers, unemployed teachers, retired teachers and volunteers and an additional 2,500 personnel drawn each year from among the new teacher-graduates will be pressed into service. They will employ multiple forms of audio-visual aids to realize in full the intentions of the programme. This will also involve a revision and merging of school and out of-school curricula and introduce in consequence, work experience in all schools, rural and urban."

Work-experience for making education maturing and stock-proof:

Alvin Toffler [14] blames educational systems around the world for doing a poor job of preparing young people for a fluid, technological society. Being well-intentioned and out of love, the parents prevent children from working, and keep them at school and college 'for longer and larger periods of time'. They think they are doing the children a favour, and then wonder why the wards seem to be immature, to have no great sense of responsibility.

In this connection he commends to us all the way study and work experience are inegrated in China. He adds that there is something 'maturing' in working while learning; further, children who do not do well at school or resist school will find life happy and creative, if there were some 'alternative educational pathways'.

Dr. Malcolm S. Adiseshiah, while inaugurating the Conference on Continuing Education of Universities in Asia and South Pacific Region (at Madras, 1970) observed:

"...... Both parents and children have regarded school education more as an escape route from rural life than as an instrument for rural development. This of course is also a result of the neglect of and discrimination against our countryside. Alongside with national policy centred on rural development, the content and processes of education must be changed so that it prepares people who can and will change the rural environment."

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13 "Towards A Learning Society", Project No. 2 p. 37

14 Toffler in his "Future Shock."

The system of formal education seems to have increased *'rural inferiority'* resulting in what Mahatma Gandhi described as "the divorce between intellect and labour." The learning system has to be *integrated* with the world of work; literacy and learning must be made functional to it. Isn't it high time for us to rediscover Gandhiji, without *being* apologetic about it?

The recent introduction of compulsory work experience in schools has its roots in the aspirations expressed in Basic education. The precise range of project work will vary but it may not be difficult in each *village to identify appropriate* projects based on fishery, animal husbandry, agriculture and rural industries. The *pupils could be encouraged to work in* teams and / or be assigned in groups or blocks at labs/polytechnics/industrial training establishments/engineering institutions. The finished product will make the pupil feel proud of having achieved something tangible for use by the *community.* White washing of the school walls, painting of the school doors and windows, envelope–making, cleaning temple precincts and surrondings, making scented sticks, etc. could be attempted in the 'Ten stage' and the vocations could be integrated into the 'Plus two stage'.

"Earn while you learn" projects and a blend of formal and non–formal methods, of education may enhance the attractiveness of the school for all the children especially the children of parents below the poverty line, and make education more meaningful and relevant to life. Dr. M. S. Swaminathan [15] Director–General, Indian Council of Agricultural research assures:

"Once the portfolio of well–defined and economically assessed *tasks* now under compilation under the Integrated Rural Development Project is ready, it will be relatively easy to pick up *economically and technologically viable* projects for learning by doing in the village school". While stressing the *need* for a scientific orientation *in the* curriculum with particular emphasis on environment and exploration, Dr. Swaminathan asks:

> "How many school going children today are aware that at the heart of agriculture there is a simple truth, namely that wherever green plants are grown, sunlight is tapped, and converted into useful products?"

He goes on to say that if these had been such a realization, the interest in covering every piece of available land with green plants would have been great, and that the experience gained under the NCERT and SITE science programme for children prepared in consultation *with top scientists should be helpful* in achieving this goal.

Integration of Rural Development:

ICAR has made a beginning in training village youth (of the age group 15 to 25) in soil health care at ten Agricultural Universities in 1976. The operational procedure of this programme is as follows: (1) Suitable boys or girls who have studied upto matriculation and who have chosen to live in villages for either family or economic reasons are selected for the training programme, (2) after the choice of the trainees, the teacher

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15 Dr. M.S. Swaminathan's *Frank Moraes Memorical Lecture,* 1976 at Madras: Reported in "Experiments in Education", Feb. 1977.

in charge of the programmes conducts a critical study of the soil health problems of the village from which the trainee is drawn, (3) an integrated training programme on all aspects of soil health, including the biology, chemistry, physics and topography of soils is imparted for a period of three months at the Training laboratory, (4) the syllabus consists of two parts; half the time is spent in learning certain universal principles of soil health care through lectures, demonstrations and practical work and the remaining period is spent in understanding and learning how to tackle the unquite soil health problems of the village from which the boy or girl comes, (5) twice yearly visit by the trainee to the parent laboratory and by the teacher to the village forms an umbilical cord which sustains the trainee until he/she is self–reliant.

These procedures can be suitably adapted to other areas of training. They depend for their success on: (1) the rural roots of the trainee, (2) the synthesis of the unique and the universal in relation to the content of the training programme and (3) the establishment of an umbilical cord between the training centre and the trainee.

Case studies of education for rural development from 17 countries compiled by the World Bank[17] indicate that all concerned must take note of the danger lurking in the corner—the danger of internal stratification developing between formal and non–formal education; this very great danger could further strengthen undesirable urban–rural, elite–masses, and educated—illiterate dichotomies. By imparting such relevant training, we can generate cadres of soil, plant, water, and animal health care workers from among the youth aged 15 to 25 in each village. Even the success of the functional literacy course for farmers will be ensured if the course is based on the interests and needs of farmers and is so designed that it is closely related to the cycle of agricultural operations.

Examination Reform :

The abolition in Andhra Pradesh of class examinations upto certain stage in schools resulted in deterioration of educational standards; this bitter experience made the authorities revive the old system of examinations. This shows that though examination is an evil, it is a "necessary evil". This system of education has come to be described as "examination dominated." The Perspective Plan Document [18] observes:–

> "The examination itself has ceased to be an evaluation of a student's general knowledge, intellectual acumen, and capacity to learn and address himself to varying situations in life. It is increasingly a harsh test of one's memory of already outdated or fast outdating facts and information. Even so, its function is negative in telling the examinees what they are not good at rather than helping them to identify their aptitudes and choose their specialisations."

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16 From Mr. B. Ardhanareeswaran's paper based on an interview with Sister McLevy: published in the Hindu dt. 9–3–1976.

17 Compiled for the World Bank by Manzoor Ahmed & PH Coombs

18 "Towards a Learning Society", page 10

In March 1976 Tamil Nadu S. S. L. C. Public Examination 2,15,404 candidates appeared and 41.5% of them (89,367) failed. In the Madras Varsity March-April 1972 B. A., B. Sc., and B. Com. examinations 16,662 out of 48,261 examinees failed (roughly 33%): However, the examination diploma is still considered as "the admission card for entry into the University or as a bill of rating in the initial qualifying test for employment."

Hence, if we are to suggest any single reform in education system (as Radhakrishnan Commission on University Education put it), it should be that of examinations. Dr. Malcolm S. Adiseshiah[19] advocates the need for a comprehensive evaluation procedure as a remedy; that procedure should ensure that

(a) it facilitates self-evaluation,

(b) it promotes learning and self-learning, teaching and futurological teaching,

(c) it encompasses every value, integrity, innovativeness, inter-disciplinarity, judgments and reflection that all education stands for,

(d) it produces performance records that are appropriate to purposes specific to it, viz., individual, professional, employment and self-employment, and further learning,

(e) it provides a constant feed-back for the larger issues of learning methodologies, teaching techniques, curricular planning, educational policies and the good life for all, which is the end of all education.

Along with semesterization, internal assessment has been introduced and is going to be enhanced in value, in higher education in the State. It has been recommended[20] that internal assessment for a total of 100 marks (20 marks each for first Language, English, Maths, Science and History and Geography) may be given by the schools and this may be shown separately in the mark-sheet. This assessment may be added to the external examination marks for the purpose of classification of students. Evaluation must become an integral part of goal-oriented learning.

Evaluation of student performance at school supplemented by the evaluation of their performance in state-wise and nation-wide screening and competency tests enable the identification of potential candidates for superior services and higher education.

LANGUAGE AND RESTRUCTURING

The Problem :

The 10+2+3 pattern is accepted in principle all over India since it is believed that it will make it easy to equate persons with one another and will help mobility. The introduction of this pattern affords the long-awaited opportunity to upgrade the syllabus and to chop off a lot of dead wood to enable students to assimilate essential knowledge in an easy and effective manner.

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19 In his paper "Education in 2001 AD".

20 Special Workshop in Evaluation (5-14 October 1976 Coimbatore) conducted by NCERT and Tamil Nadu SCERT to prepare guidelines for the Ten-Year school final examinations.

The first set of students will come to the first year of the Plus Two Course in 1978, and to the first year of college in 1980. The Board of Higher Secondary Education, Tamil Nadu, has decided to allot 4 periods of English per week. The Madras University's "Tentative Outline" for "restructuring" of the degree course to come into effect from 1980–81 proposes to give 2 hours per week for each language under Part I and Part II in the first two semesters and three hours in the third semester. There is still some time for all concerned (including the academic community) to offer their considered views on the proposals which are fraught with serious consequences. This paper is an attempt to look at the role of languages and the relevance of language study in Plus Two and Degree courses, with special reference to English.

The Diagnosis:

In the early years of Independence there developed a prejudice against English because it was the language of the former rulers. "The practical necessity for an adequate knowledge of English for every school–going child in India had gradually led to the wearing out of the prejudice against it... Even in the States in which it has been looked down upon as a rival to Hindi for inter–State communication, there is now a growing tendency to give English its due place in the curriculum." [21]

One of the chief reasons for the fallen educational standards was the cut in the quantity of English teaching at the college level. The "sad story" began in 1957 when the two–year Intermediate was abolished and the Pre-University Course was introduced; the language study prescribed was reduced both in quality and quantity; it was confined to the first two years of the degree course. Thus from 4 years it was reduced to 3 years; it was relegated further to the background a few years ago, when the number of hours meant for language study at the degree level was brought down from 10 to 6. Now another "unkind" cut threatens to come.

In their desire to further their interest in sciences the authorities should not lose sight of the fact that the training of the students in language use is the preparation for any career. The notion that the quality of the science courses will be toned up if only "the incubus of the languages could be reduced is as unfortunate as it is unscientific." Thus observed Prof. S. Swaminathan, the President of the Association of University Teachers, Tamil Nadu, while addressing a recent convention of college teachers (who met to voice their concern about the proposed "debasement" of language study.) The change in the educational pattern, semesterization, internal assessment, incorporation of work experience/community social service into the curriculum, the new orientation given to the syllabi have all to be understood by all concerned and implemented effectively and then evaluated. Reforms at a "breakneck pace" without breathing space for review, evaluation and follow-up action are most likely to engender "academic anarchy" rather than promote quality change.

The need for communicative skills for report/thesis writing and for dissemination of general knowledge of technical matter through simple readable language,

21 – Journal of English Language Teaching, V, 2.

and the "humanising value" of languages have already been recognised the world over in Institutes of Technology, Agriculture, Veterinary Science etc. We have to depend on English to provide a "window on the world", to be the pipeline for the growing fund of knowledge in science (including social sciences) and technology.

The Third World countries have become the centre of world attention. In Asia the pattern for the future of nearly two-thirds of the world is being determined, but approximately 90% of the scientific and research potential of the world is concentrated in the developed countries. The developing countries should not feel shy of "borrowing" the results of this "frontier research" and this could effectively be done through English without loss of time. Amadou-Mahtar M'Bhow, UNESCO Director-General, observed (at the opening of the Ministerial Meeting of the Committee for Scientific and Technical Policy of the OECD, June 24, 1975):

> "It is no exaggeration to say that the dynamic equilibrium of the world might be seriously disturbed if the contribution of new knowledge from the developed countries were to cease..... It is incumbent on the international community to meet the challenge by finding a balance in the exchange of materials, energy and information, as well as human beings, so that international relations, in which there is so much tension that jeopardises peace, may be stabilized on more equitable bases ensuring the welfare of all."

Education at all levels and in all categories is a dynamic process in that it influences and is influenced by knowledge explosion. Economists formerly considered knowledge to be the residuum of the production process but today the discovery and application of new knowledge play a role at least equal to that of capital and labour in the transformation of modern economic systems. No formal educational system can convey all the information the learners will need throughout their life. In fact they will have to be retrained for new jobs several times during their working life. Life-long education is therefore a necessity. The greater the speed with which knowledge increases the more important it becomes to train students to acquire learning skills. Language the integrator and communicator of all knowledge, and Library the "information catalyst" must be constantly and continually utilised by students:

Equalization of Opportunity:

The educational system has its own responsibility: it has to respect the realities of students' lives and needs; it must be operated in such a way that the general level of the whole population is raised. "Inequalities at all levels of education, whether they be of a social, economic, cultural or any other origin, must be reduced and eventually eliminated by means of a strategy carried out primarily through reforms in the structures and programmes."[22]

"Far too often people's station in life has been determined by the formal education they have received in childhood and youth... Until recently the masses have accepted their "station in life" as hewers of wood and drawers of water in a society of elites. But

22 WCOTP European Regional Conference, Zurich, 1975

the growing understanding of their rights, the rights of man through broadcasting first radio, now television, and the cinema have led them to question the status quo, their station in life and the lives, values and powers of the elites." (Dr. Malcolm S. Adiseshiah, 1970). People look to the educational institutions with high expectations for preparing young people to live in tomorrow's society—to live with change and contribute to constructive change. The educators have the "impossible job" of trying to prepare them (the youth) to live in a world which no one can predict. The public may not take it lying if the elite tinker with and "devalue" language study on the plea of enriching science study. A positive community attitude to the educational institution is certainly most desirable; this is fostered by showing that the institution aims to serve the best interests of its wards.[23]

The principles on which the Education Model for Tamil Nadu for the future is based are those of "continuity and renovation, of sanctity of contracts (so that no one now employed will be discharged from service because of any proposed restructurisation or reform) and of gradualism so that the necessary transitional period is allowed for in the innovations proposed."

The Remedy :

According to the Tamil Nadu 12-Year Perspective Plan (Towards A Learning Society, 1972), each stage of education will correspond to an "ascending order of skills", "for which the preparatory language learning will be completed in the Intermediate course, the degree and post-graduate courses being subject-centred or professional." Where will the students be able to improve and continue their skills? To allow inadequate English to impede the University students' progress is a large scale wastage of educational resources. It stands to reason that language study policies should be geared to that end (in addition to offering some remedial work in English to help the weak students to acquire the basic command of the language. Two years ago post-graduate teachers of History who conferred in Madras seriously considered why English should not be studied by students in their first year of post-graduate course. At a recent UGC national workshop on syllabus reforms Osmania University Vice-Chancellor is reported to have said (The Hindu, March 27, 1977) that it was not only necessary to train English teachers to make English Curriculam relevant, but also to "train teachers qualified in science, agriculture and technology for teaching in that language so that they could better communicate."

The functional importance of English exceeds mere communication necessity. The price of rejecting English as the medium of higher education in a few States has been so heavy that most other States have been unwilling to follow suit. "The social image of India is still in favour of English. The premium on grammatically good English is still very high. The masses don't show as much disenchantment with English, or hostility towards it, as is evident from the pronouncements of a section of the leadership. English medium schools are still very much sought after by the social elite or by those who want entry into the social elite through their children."[24]

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23 WCOTP Pacific Regional Conference, 1976
24 Khubchandani, South West Asia Regional English Language Centre, 1976

A five-month survey was used by Rajasthan University to identify the needs for adult education; the needs revealed were shorthand and typing, home gardening and IMPROVEMENT OF ENGLISH. The medical authorities of our country since a few years ago have been ignoring the study of English for the purpose of linguistic competence in the medical colleges of many universities. Consequently, even the medical graduates who had some grounding in English in the first year of their course failed to make the grade in the entrance tests for advanced studies and employment in Britain. What was responsible for their rejection was not so much their deficiency in professional knowledge as their failure to communicate effectively with their examiners (either in viva voice or in writing.)

Any degree course without a language component is going to be without a significant and indispensable component and tool; it will be what work, for most Americans is, (as Charles Reich puts it in his The Greening of America, 1970), mindless, exhausting, boring, servile and hateful, pointless and empty. Overspecialisation will have to be checked until some balance is reached between the levels of employment potential and the man power available. What our education authorities should realise is that the main purpose of educational restructurisation is to try to provide a better and more relevant curriculum, especially at the Plus Two stage, and not a mere change in the number of hours, years or its location. Any attempt to lead young people to "blind alleys of specialised unemployment" on a large scale is bound to prove quite unpopular with parents and students. Exclusion of human values from the educational scheme in Plus two and degree courses is not conducive to a healthy educational endeavour." It is the human heart by which we live and we owe our happiness and sense of fulfilment to its tenderness and miraculous power . . . What we want at present is harmoniously developed citizens who are emotionally and intellectually well balanced and not stunted half-breeds.[25] The following quotation will not be out of place: "I am a person. You are a person. Without you I am not a person, for only through you is humanness made possible."[26] It is a futurological exercise to consider the next generation "will prove on the average more quick to respond and much better informed on a variety of methods and subjects than the present one; therefore we can envisage a higher standard of instruction and attainment."

Literacy has spread rapidly among the masses and with it the demand for learning English; hence bilingual contact between Indian Languages and English has been fast widening in its scope. There has been a tremendous increase since the British left in the number of English-knowing people, teachers of English, students of English, and Indo-English writers. "History has indeed given rootage to English education in India and through it to the English language. And since it is so the task before us is not to banish it or do any other punitive things, but to let the vernaculars exist side by side in the same scheme of education, as the Orientalists also recommended, till there is a two-way

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25 Prof. K. S. Nagarajan, University language Teachers' Association, 1975

26 Thomas A. Harris in his "I'm O.K.—You're O.K., 1967

transition established." [27]

Barriers of segregation between the English educated and the masses are heading for removal in the fields of education, administration and other spheres of public life; this is bound to escalate the process of acquiring full expression for Indian languages. The English intelligentsia is slowly but surely shedding their shyness in giving the lead to the task of writing non-narrative prose in these languages and are thus facilitating English to pay a positive role as an efficient tool for inter-group and inter-group contact in our multilingual nation, *to be an effective contact language in* Asia and serve as a "world" library language for referential purpose at the higher education level.

The implications of any educational reform for the community of teachers in terms of their job opportunity and conditions of work need special consideration. The reform should not march ahead on the "blood-shed" of retrenchment of hundreds of teachers in service and the slowing down of the recruitment of many more in fufure. It is no use saying that no country in Europe spends so much time on the study of languages. Let our educational authorities construct an INDIAN EDUCATION MODEL based on locally available material and try to improve on this humanizing "indigenous" education in order to shape citizens for the future..... harmoniously developed, intellectually and emotionally well-balanced, without "swollen heads and shrunken hearts." [28]

Research and Teacher Training :

The "key element" in achieving all that we discuss here would be the education and training, and, motivation and involvement of the teaching personnel. Qualitative improvement of education will not become a reality unless and until the following measures are taken care of seriously:

(i) Pre-service training of teaching personnel,

(ii) at least a year of internship-cum-probation for the trained candidates,

(iii) constant on-the-job monitoring and guidance,

(iv) re - orientation and refresher training to acquaint and motivate the teacher and secure his involvement in the new *patterns, projects, schemes* and programmes,

(v) personnel policy which will attract, train suitably and retain in a contented manner dedicated and competent, and, efficient and effective teachers.

There should be a regular feed-back mechanism to effect necessary improvement and attempt solution of new problems as they arise. Financial assistace and other facilities should be accorded to the teachers' colleges to carry out applied research of utilitarian value. It is an undisputed fact that the teacher has remained the same whereas the syllabus has been changed, revised or updated frequently. In many an institution the atmosphere is far from being congenial for teaching/learning; this serves as a *passive and promotes a negative attitude* to education change through which social

27 K. K. Chatterjee in his preface to his book English Education in India, 1976

28 Prof. Ardhanareeswaran, Hon. Secretary, English Language Teachers' Association of India.

change should occur. The chief influence on motivation is the *learning process* itself. Only a highly motivated person can teach himself; interest and confidence about being on the right route are the driving wheels of motivation. "Without them, the best-laid plans for learning will not get very far." (Bruce Pattison, 1976).[29]

Probably the lack of proper academic atmosphere is only a reflection of the large and complex political and social spectrum of the larger society outside. It is perhaps a great tragedy of our time that this is so. This should be duly investigated.

According to the Perspective Plan,[30] continuing *reasearch in improved* teacher-education which is the corner-stone, on which the strength of Tamil Nadu's education edifice rests, will involve an accelerated programme *for in-service* education of teachers, the upgrading of the teacher-training institutions and the "restoration of the status" of the teacher in accordance with the UNESCO/ILO recommendation. The WCOTP recommeds[31] that teachers and their organisations must play an important part in educational planning *and in the determination* of educational policy because:

(a) teachers have a far-reaching knowledge and experience of the needs of the situation and the life of *educational institutions*;

(b) *the decisions* taken about education affect the conditions of service of the teaching profession;

(c) no educational reform can be effective without agreement and collaboration of teachers.

It gives meaning of "participation" as *the creation* of opportunities under suitable conditions, for teachers to influence or, when appropriate, to make decisions affecting education by their *involvement* in the decision-making process (a) at the institutional level, (b) at local and regional level, (c) at national level and (d) at international level. *Participation* should take place in three sectors:

(1) the goals and the objectives of education,

(2) the working methods,

(3) the conditions of life, of work, of salaries and of employment of teachers.

Education for International Understanding:

Similar to population explosion is another dominant global concern, viz., environmental pollution. Roger Revelle, a population expert, and Hans Landsberg an economist consultant on environmental matters to the UNO advocate a change in

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29 Professor of Education in the University of London.

30 Towards A Learning Society, Page 41.

31 WCOTP Seminar (Luxembourg, 4–9 May 1976) on Teacher Participation in Educational Policy-Making and Planning.

our habits and transformation of our technological capacities so as to protect our physical and spiritual environment. Increasing the effectiveness of anti-pollution measures depends upon a greater public education concerning the issue.

The future oriented education must take due note of the emerging techno-economic structures like the New International Economic Order adumbrated by the UNO in the wake of increasing international insecurity. India joined with the other third world countries in deciding to usher in this Order based on a system of "mutually re-inforcing co-operation, collective economic security, and independence within inter-dependence." A technical centre for the region is being set up in India for effecting "transfer of technology".

Inclusion into the curriculum a study of the salient features of religions, various cultures, societal structures, governme nts, economic patterns and geography. Penfriendship is a useful hobby related to this study.

Reference Skills for Self-Study:

Instead of the teacher giving all the necessary information (about the environment, etc.) it would surely be better for students to discover it from newspapers, magazines and reference books like Atlases, Encyclopaedias and Thesaurus.

"Communicative skills" which are duly experienced by the UNESCO go hand in hand with and are closely related to "reference skills."

The library holds the key to the modernisation of educational methods; "quality education" for meeting the needs of the local, national and international community will be life-centred and library-centred, instead of being curriculum-centred and text-book centred. Library-centred education leads to self-teaching. Such education is "individualised open education"......an indispensable component of the Open University.

A word of caution to Educational Planners:

Learning how to read meaningfully, to master the "art of successful silent reading with speed and comprehension," and to acquire new knowledge is the essence of self-education and "self conscious adaptation to a changing world". While we harp on all types of education we hardly spend any time, energy or money to analyse the skills required for living in tomorrow's world while we emphasize on dishing out factual information we are reluctant to emphasize on the development of reference and communicative skills.

Language has one advantage over the other disciplines, and it is fully not to exploit that advantage. It is a means by which people interact, by which people live together. Language peculiar to any activity has to be learned with the activity itself. As Alan Pifer [32] warns, "In this kind of restructuring, however, the liberal arts, which are the very heart of higher education, must be neither jettisoned nor de-emphasized. There may well be fewer students who feel that it is in their interest to graduate with majors in certain discipli-

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32 Alan Pifer is President, Carnegie Corporation of America. This excerpt is from his Carnegie Corporation Annual Report, 1975, condensed in "Today's Education" (Nov-Dec. '76) the Journal of the National Education Association, U. S. A.

nes, but it ought to be mandatory for all students, whatever their majors, to include a generous portion of liberal education in meeting the requirements for their degrees. We dare not turn out narrowly trained graduates who lack the breadth and flexibility of mind that will be required for intelligent decision-making in a rapidly changing world."

Language and literature are among the most vital liberal arts. The enrichment of science curriculum need not be at the expense of language study even at the degree course level, and a heavily loaded science syllabus need not necessarily be an "improved" syllabus. We should not forget character formation and merely talk of disciplining the mind through the teaching of subjects. It is almost impossible to organise a curriculum that would fully meet the requirements of tommorrow.

The problem, not the potential solution, is the starting point. "Educational planning, in order to be successful, should pay attention "both to the educational needs and social objectives of whole populations and to the management of change in micro situations at the institutional level. Where there is consensus on the directions of planning it becomes more practicable to identify and encourage specific innovations within the more desirable victors." [33]

What Alan Pifer[34] sets as an important task of higher education is that it "should review every aspect of its operations to be certain in a moral sense it really does qualify for public trust and approval."

Education for Thinking/Humanization:

Thanks to the proliferation of media of communication, there is a greater fear than ever before of brain washing and conformity. If education is able to foster "thinking skills" in today's adults and tomorrow's citizens, then they will be "prepared" to face the unprecented and rapid change and the challenge and shock of the future with self-confidence and equanimity. Such education would, as Prof. Jerome Weisner[35] avers., include the broadest spectrum of interests in the humanities and social sciences.

Humanizing education should be the infrastructure for the education of the future. Besides the graduate and, to some extent the post-graduate courses, technological education, even at the advanced level, ought to include humanistic studies which include social sciences; the introduction of humanities into an educational course of specialisation in science and technnlogy could emphasize the ethical and social consequences of technetronic achievement. Mahatma Gandhi proved the supermacy of the spiritual power over the material force; and both developing and developed countries should be concerned with the evolving of that education which aims at helping the student to prepare for "complete living", adjust to the environment, perfect one's nature, and develop one's personality; this philosophy of education aims at rehabilitating moral values in the educational system so that education is not just learning but "becoming."

33 Commonwealth Education Liaison Committee, Newsletter, 1975.

34 President, Carnegie Corporation of America.

35 President of MIT from 1971; formerly President John Kennedy's Special Assistant for Science and Technology.

Educational costs and quality control :

The studies being made on cost–benefit analysis and other aspects of educational system would give us the data to assess costs and quality for control purposes. One should agree with Lady Ursula Hicks[36] that investment in human capital can and should be a prime educational objective from the very start of the school career. To Dr. M. S. Swaminathan, it is obvious[37] that unless education interacts with other inputs for economic development, the full benefit from our investment in education as well as development may not be realised.

No educational planner can ignore the twin–point that costs will act as a constraint on education and in return the need of education will influence the nature and magnitude of costs. Prof. J. P. Naik[38] expressed that with the inexhaustible reservoir of human resources at our disposal and the deployment of the available financial resources our quantative imperatives could be reached through qualitative priorities.

The Perspective Plan Document[39] shows the distribution of public educational expenditures as follows :—

Source	In crores of rupees
State Government	89.85
Central Government	3.50
University Grants Commission	5.00
Local Bodies	5.00

The percentage proportion of each source to the total is as 86.94 ; 3.39 ; 4.84; 4.84.

As per the Document, these figures evidence a financial overburden on the State government and an inadequate contribution from the Central Government and local bodies. The Document has listed the more desirable requirements and proposed that the State finances for education be redeployed to provide for these requirements[40] :

Free education upto the terminal school, standard X ;

Free out–of–school education, so that the 51.2% of wasters from primary school and the 60% illiterate adults obtain the minimum schooling ;

Improved science and craft education at school ; and Scientific and developmental research programmes and post–graduate education and research at the Universities.

The Document has also proposed that "higher education be gradually returned

36 In her foreword to SC Goel's book "Education and Economic Growth", Macmillan, Delhi.

37 Frank Moracs Memorial Lecture, Madras, 1976.

38 In his lecture on Educational Financing at the University of Madras,1976.

39 "Towards A Learning Society," p.58.

40 "Towards A Learning Society," p 16

to a system based on fees alongside of an extensive scholarship scheme based on merit and/or poverty as decided by a means test."

Indian Education Model — the desideratum :

There seems to be a growing realisation in USA[41] that "they must stop trying to sell higher education to potantial students primarily on the grounds of its economic benefits." "This simply plays into the hands of those who are saying that the economic returns are no longer worth the investment. Colleges and Universities should instead be stressing to students the many non-pecuniary benefits of the experience. To the public they must do a much better job of explaining the wide variety of functions performed by higher education."

Prof. S. V. Chittibabu[42] remarked (at the Madras Institute of development Studies, 1974) : "Transplanting educational systems from developed countries to ours without examining their relevance or otherwise in the context of our own national non-power requirements has proved to be a costly experiment."

Dr. Malcolm S. Adiseshiah[43] observed (in the International Education Year) :

"The educational system in this part of the world to a large extent has been built on inspiration from other cultural traditions, mainly European' and there are many resulting points of contrast and incongruence between our education, Asian traditions of education and the realities of life outside of our schools and Universities. A change of our attitudes and our approaches which will take more account of the economic social and cultural miliew of the students is needed.

The craze of many of our scientists and educationists for recognition by the Western peers should get replaced by an overwhelming respect towards indigenous appraisal. [44]

Now Universities are beginning to realize that "they have a fundamental role to play in research, in the design of curricula and teaching materials and in training at the higher levels. And the University role is not restricted to one particular university department. The linguists, social scientists, agriculturalists, engineers and pedagogues to mention only a few have contributions to make. In making these contributions, by applying their knowledge and skills to new problem constellations, they become aware that their newly gained experience has an important transfer value to their ordinary university teaching and research."

Persons who can benefit by specialist training, persons who are respective to

41 Today's Education (Journal of the National Education Assn., USA) Nov–Dec'76 p 29 (Article: Higher Education Today & Tomorrow).

42 In his paper on Informal Education for 1974 October Seminar (p.3) MIDS. He was then Director of Collegiate Education at, Tamil Nadu.

43 In his inaugural address to the Conference on Continuing Education of Universities in Asia & South Pacific Region, 1970; He was then the Dy. Director General, UNESCO.

44 Dr. S.C. Seth, NCST Panel on Futurology, 1976.

new ideas, people who are men of action and people who can lead others are of vital importance for "education change." A dynamic situation is the guarantee for any innovation or project to be effective.

While not a little had been achieved in our country much more remained to be done. The momentum in development so far gained must be sustained and accelerated in the coming years.

It is hoped that Tamil Nadu will be in the vanguard of social and economic progress and developmental efforts of the nation.

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Summary of Discussion

In the discussion of the paper at the Seminar held in the seminar room of the Institute, on Thursday 28th April 1977, under the chairmanship of Mr. R. Sundaresan of the Indian Adult Education, Madras, the chairman remarked that the theme of the paper was difficult to encompass within the limits of a small seminar document.

The author, in presenting the paper, pointed out that it was not possible to deal with all aspects of education in the paper and that even those problems touched upon could not be discussed comprehensively. Education is an important instrument for the development of human resources which is crucial to all progress. A demographic perspective shows that 58.4 per cent of the world population is in Asia, 1/4 in India and 1/13 of India's population is in Tamil Nadu. This reveals a valuable resource and a problem in terms of numbers. Of the 945 million projected population of India expected by the turn of the century, almost 50 per cent will be under 16 years of age. Education must, therefore, not only include information and skills but inculcate the benefits of a small family norm at an impressionable age, information on population increase, national birth rate and death rate being part of the primary curriculum. A depressing feature of the Indian education picture is the low level and slow progress of female literacy—1.8 per cent in 1920, 9.4 per cent in 1950 and 18.4 per cent in 1971. Study shows that the greatest wastage occurs in the age-group 11–14 years and special measures such as functionalisation of school curricula, free distribution of clothes to girl pupils and provision of additional quarters for women teachers in rural areas might help to reduce this wastage. A closely linked problem is that of pre-school and early childhood education. In this context an innovative approach developed in Brazil by Dr. Yaro R. Gandra was cited. Even in urban areas where pre-school and nursery schools existed, teaching and environ-

ment were unsatisfactory in many instances. The constitution of a Board of Early Childhood Education on the lines of the Tamil Nadu Board of Continuing Education was suggested. The author expressed the view that much of the malaise that existed in the later stages of education could be traced to mishandling at the stage of early childhood education. Commenting on the Government's policy of universal primary education, it was pointed out that even though in Tamil Nadu there is an elementary school within a mile's radius of every village with a population of 300 and above, there are three principal constraints namely general poverty, lack of awareness of the the positive gains and the power of the educational institutions to attract and hold the children. An equally important sector is that of the development of non-formal adult and continuing education in which voluntary agencies, youth organisations and departments of the Government should be more intensively involved. The University in particular had a special role to play in the area of continuing education by providing evening college courses, making provisions for teachers and graduates to acquire additional qualifications and para degree and refresher courses to keep pace with the the growth of knowledge. Education systems have to be redesigned to provide alternative pathways integrating work and study, as in the Chinese model, to prepare young people to function with maturity in a fluid technological society. A key component of education has to be the training for rural leadership for integrated development. A promising beginning in this direction is the ICAR scheme for village youth with its careful selection, training and continuing contact procedures. An area of change in the present formal education sub-system is the evaluation procedure which is equated with syllabus based and memory centred examinations. The restructuring should ensure a process of self-evaluation, encourage self-learning and cultivate academic skills and non-academic capacities. Semesterization and internal assessment now being introduced are a good augury. Commenting upon the restructuring of the education pattern to a uniform 10+2+3 all over the country and the status of language in the proposed curriculum, specially English, the author observed that policy decisions should not be influenced by possible prejudices against English as communication skills are important even in discipline weighted courses. Aprroach to education reform and management must be sustained by training and research and inspired by the ideals of equality of opportunity and international understanding. Practical considerations of education costs, allocations and quality control should ensure desired progress. From the experience gained from the last 30 years it is possible to evolve a model suited to our needs and aspirations.

In the discussion that followed it was observed that the paper dealt with some selected aspects of educational development and had treated these intensively. An unfortunate feature of the present education system is that it has to function under State and political domination. Further the text books were mostly of poor quality leading to deterioration in content. The development of regional language, philosophy and culture should not be linked to transient political considerations. A desirable trend would be to encourage private enterprise with adequate safeguards to leave room for flexibility and innovation. A query was raised about the effects of too much stress on regional

languages or the envisaged structural change of 10+2+3 instead of the diverse systems now in existence. A view was expressed that English language teaching should stress functional competence rather than acquaintance with literature. With reference to hours of teaching it was pointed out that the former Hons. course of the Madras University required only one year of language instruction with three hours of teaching a week. A possible cause of deterioration in language skills is the communication gap between teachers who were taught in English and pupils who, upto the pre-degree stage, have been educated in the regional language. Commenting upon illiteracy statistics, attention was drawn to the absence of disaggregated figures for illiterates and for drop-outs among women and girls in the rural areas. The entire issue of language teaching-regional language, Hindi and English—does not allow of a simple solution as decisions appear to have been made on non academic considerations. Population education and the stages at which it should be imparted is a delicate issue. It is a matter of regret that the working of private institutions had not been free from blemish. In the paper the major aspects considered were on the nature and structure of supply and very little analysis of the social demand for education was made. It was also thought that the daily timings of schools could be modified to suit rural clientele and seasonal occupations of the people. Commenting on the variations in syllabi and content of various types of school education, it was stated that the present SSLC standard was rather low. Moreover in the framing of the sylabi, teachers should be associated more effectively.

In conclusion it was stated that emphasis on the teaching of English did not mean relegation of other languages and disciplines to a secondary status. The ideal arrangements is the implementation of the three language formula to meet communication and Integration needs at State and national levels.

SIXTH ANNUAL REPORT*

January 1976—March 1977

1. Introduction:

1. 1. The Sixth Annual Report of the Institute on this occasion covers a fifteen month period—January 1976 to March 1977—instead of the usual 12 month calendar year, as a transitional measure as the Institute programme, budget, accounts, etc. move over to the financial year from 1 April 1977.

1. 2. Further as this 15 month period under report was also the occasion for the completed negotiations for the restructuration of the Institute from its original Trust status aided by an Advisory Committee to a National Institute directed by a Governing Council, the report begins with a summary conspectus of the fourfold function of the Institute during the first six years of its existence (January 1971 March 1977).

1. 3. The Institute was founded with the aim of contributing to the economic and social development of Tamil Nadu and the country and in the discharge of this aim has undertaken four functions:

a. Studies on agro-rural problems for the appropriate Departments of the State Government and the Tamil Nadu Sector of all India studies planned by ICSSR.

b. Seminars and Conferences on development problems and programmes of the State.

c. Inter University co-operation among the social scientists of the 22 Universities of the four Southern States.

d. Documentation and publication services arising from the above three functions.

2. Studies:

2. 1. During the six years the following studies have been completed under the supervision of the Director, Malcolm S. Adiseshiah.

A. For the Department of Agriculture

1. Economics of Dry Farming Technology for Tamil Nadu(1971)
2. Land Reform in Tamil Nadu (1972)
3. Returns to minor irrigation in Tamil Nadu (1973)
4. Income and living levels of Small Fishermen in Tamil Nadu (1974)

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* The Report of the Madras Institute of Development Studies for the period, January 1976–March 1977, presented to the Governing Council on 21st March 1977.

5. Operational Efficiency of Small & Medium Plantations in Tamil Nadu (1975)

6. Economics of Multi-crop economy for Thanjavur District (1976)

7. Paddy and Rice Marketing in Northern Tamil Nadu (1976)

8. Economics of sugar cane cultivation in Tamil Nadu (1975)

B For Department of Labour and Employment

9. Rural Employment in Tamil Nadu (1975)

10. Unemployment among the ITI Trainees in Tamil Nadu (1975)

11. Matching Employers Demands and Education Output (1975).

C For the Department of Education

12. Survey of Non-formal Education in Tamil Nadu (1975)

13. Rural Primary Education and Adult Literacy in Tamil Nadu (1976)

D. For the Department of Social Welfare

14. Income Earning Trends and Social Status of the Harijan Community in Tamil Nadu (1971)

15. Nutrition in Tamil Nadu (1972)

16. Poverty and wage goods supply in Tamil Nadu (1973)

17. Women's Welfare in Tamil Nadu (1974)

E. For the Department of Rural Development & Local Administration

18. Rural Housing in Tamil Nadu (1976)

19. Returns to Link Road Investment in Tamil Nadu (1976)

F. For the Universities in the South

20. A Guide to Research in Economics (1972)

21. Introduction to Mathematics & Statistics for the Student of Economics (1973)

G. For I.C.S.S.R.

22. Educational Problems of Scheduled Castes and Scheduled Tribes in Tamil Nadu (1973)

23. Review of ICSSR Fourth Plan & Prospects for the Fifth Plan (1973)

24. Employment Profile of Scheduled Castes & Scheduled Tribes (1973)

25. Educational Plan for Tamil Nadu (1976–86)

26. Some Educational Problems of Tamil Nadu (1976).

H. For U N E S C O

27. Learning To Do (1975)

28. Manual of Literacy Statistics (1976).

2.2. These studies were undertaken by:

Senior Research Fellows

Malcolm S. Adiseshiah
C. T. Kurien
S. Ramanathan
Rajammal Devadoss
M. Abel
Barbara Harriss
T. C. Mohan
N. Rajagopala Rao
V. Lakshmana Rao
A. Joshua
C. L. Narasimhan
B. N. Chinnappa
S. Ekambaram

Research Associates

A. Vagiswari
Jayalakshmi Ganesan
R. K. Sampath
G. Venkataramani
M. Ramamurthy
K. G. Rama
C. Selvaraj
J. Viswanathamurthy
R. Ethiraj
J. Ravishankar
V. Rengarajan
Meenakumari
F. R. Joseph

Research Investigators

D. Theophilus
R. Swaminathan
B. Kannan
G. Ramaswamy
Neelaveni
K. S. Krishnakumari
R. Lingaswamy
B. Indra
V. Uma
G. Sukumaran
A. S. Francis
M. Natesan
G. Vijayalakshmi
P. V. Rangamani
M. S. Narayanan
T. K. Viswanathan
S. Santhanakrishnan

2.3. The studies have been presented to the appropriate departments of the government (and the Chief Minister/ Governor and the Minister/Advisor concerned) with a memorandum suggesting the follow up necessary.

3. Seminars and Conferences

3.1. Three Conferences were organised by the Institute during this period.

3.1.1. Conference on Consumer oriented Research—1971 attended by business and government department leaders and academics which resulted in an agreed set of recommendations of the applied research themes that should be undertaken by the research institutes (MIDS & ITES) and the five universities in the State.

3.1.2. Conference on Techniques of Perspective Planning 1971—which reviewed and recommended the tools and techniques to be used in drafting a Perspective Plan.

3.1.3. Conference on Plan Implementation 1973—which made a survey of the problems of Plan Implementation and Prospects of sound Plan execution and administration for the Fifth Plan.

3.2. The Monthly Seminar held on the last Thursday of every month has been run during this six year period with the following members:

Name	Subject	Residence
C. M. Abraham	Sociology	Madras
Malcolm S. Adiseshiah	Economics	Madras
M. S. Appa Rao	Business Management	Madras
M. V. Arunachalam	Business Management	Madras
S. V. Chittibabu	Education	Madras
A. Devasia S. J.	Economics	Madras
K. S. Hegde	Engineering	Madras
R. Jayalakshmi	Economics	Madras
K. M. Joshi	Education	Pondicherry
P. V. Krishnamurthy	Mass Media	Madras
C. T. Kurien	Economics	Madras
P. S. Lokanathan	Economics	Madras
T. M. P. Mahadevan	Human Sciences	Madras
V. Sp. Manickam	Human Science	Annamalainagar
J. P. Naik	Social Sciences	New Delhi
T. S. K. Narasimhan	Public Admns.	Madras
Y. Nayudamma	Science	Madras
K. K. Pillay	Social Sciences	Madras
C. D. Rajeswaran	Economics	Madras
P. K. S. Raja	Social Sciences	Annamalainagar
A. Ramachandran	Engineering	Madras
J. Ramachandran	Political Science	Madras
M. N. Rao	Business Management	Madras
T. S. Sadasivan	Science	Madras
V. Shanmugasundaram	Economics	Madras
C. Subramanian	Public Affairs	Delhi
N. Subramanian	Human Sciences	Madurai
N. D. Sundravadivelu	Education	Madras
R. Venkataraman	Planning	New Delhi
T. S. Venkataswami	Economics	Madras
B. N. Chinnappa	Statistics	Madras

Name	Subject	Residence
Haji N.V. Noor Mohammad	Juridical Science	Madras
K. Jhaveri	Education	Pondicherry
T. V. Natarajan	Public Affairs	Madras
B. Ramamurthy	Statistics	Madras
S. Ramanathan	Sociology	Madras
R. Ramanujam	Economics	Madras
S. Sampath	Engineering	Madras
B. Ardhanareeswaran	Social Science	Madras
A. Hamasaleelavathi	Demography	Madras
V. C. Kulandaiswamy	Technology	Madras
S. Pothan	Juridical Science	Madras
P. V. Rajkumar	Economics	Madras
M. R. Santhanam	Education	Madras
M. Thomas	Human Science	Madras
S. Nityananda	Social Science	Madras
A. Joshua	Education	Madras
R. Venkataraman	Economics	Madras
M. Mezhukanal	Human Science	Madras
T. S. Jayakar	Public Adms.	Madras
R. Nityananda	Management	Madras
S. Patankar	Education	Madras
V. Basu John	Technology	Madras
C. L. Narasimhan	Economics	Madras
R. Sundaresan	Education	Madras
Rathindranath Roy	Science	Madras
Meenakumari	Economics	Madras
T. C. Mohan	Economics	Madras
Raghuram Singh	Education	Madras
T. S. Narayanaswami	Journalism	Madras
M. Srinivasan	Economics	Madras
L. Vedapuri	Juridical Science	Madras
R. T. Narendra	Engineering	Madras
V. Rengarajan	Economics	Madras
G. M. Andavan	Planning	Madras
T. S. Devadoss	Human Sciences	Madras
Sethunarayanan	Technology	Madras
S. C. Joseph	Economics	Madras

3. 2. 1. The Annual themes of the Seminar which were broken down into 11 months subjects each year were:

Development Problem of Tamil Nadu 1971

Science and Technology for India and Tamil Nadu Development 1972

Perspective Plan for Tamil Nadu 1973

Tamil Nadu Fifth Five Year Plan 1974

Current Problems in Tamil Nadu 1975

Mid Fifth Plan Review of Tamil Nadu 1976

3. 2. 2. In 1975–76 a Special Seminar was established on the Development of Education in Tamil Nadu 1976–86, which met on the last Friday of every month to work out at the request of the ICSSR the problems and perspectives of Educational Development in the State during the coming 10 years. The membership of the special seminar was restricted.

Subject	Author	Date
Evaluation of Some Educational experiences in Tamil	K. Venkatasubramanian	Friday, June 27, 1975.
Policy and Performance in Tamil Nadu Education	V. T. Titus	Friday, July 25, 1975
Functional Literacy	S. Krishnamoorthy	Friday, Aug. 29
The Role of the Teacher in the process of learning	Balakrishna Joshi	Friday, Sept. 26,
Curriculum in terms of objectives and disaggregated learning units	S. S. Rajagopalan (Headmaster)	Friday, Oct. 30
A Practical Plan for multipoint entry in the 10 year school	K. Parthasarathy	Friday, Nov. 28
Learning Achievements for Employment Qualifications	S. Sampath	Friday, Dec. 26.
Non-formal education for the age group 15–45	T. Koilpillai	Friday, Jan. 30, 1973
Education as a force for status quo vrs social change in Tamil Nadu	C. T. Kurien	Friday, Feb. 27
Non-formal education for the age-group 6–11	Sister Catherine McLevy	Friday, Mar. 26
Work experience, prevocational and vocational training in non-formal and formal education	A. P. Jambulingam	Friday, April 30
Open University of the air for Tamil Nadu	S. V. Chittibabu (Vice-Chancellor Madurai)	Friday, May 28
The will to reform and problem of education management	M. S. Adiseshiah	Friday, June 25

3. 2. 3. Ad Hoc Seminars were held on the occasion of visits by development specialists to the city who were : Arnold Harberger (1972), Joseph Pois (1973), John Lewis (1975), A. Ahuja (1975) Dennis Wright (1975) and J. Kornai (1976).

4. Inter University Cooperation

4. 1. Every year from December 1971, the Institute with the co-operation of the Southern Regional Centre of the ICSSR has organised a two day meeting of the Heads of Social Science Departments of the Southern Universities. Six such meetings have been held during December of every year at which some 30 Heads of Departments (a) review the problems faced in post graduate teaching and the progress made in research, agree upon the means of improving both teaching and research and the recommendations to be made to the Vice-Chancellors, the U. G. C. and the ICSSR in this important area, (b) exchange information on the writing and production of text books and (c) plan the summer workshop referred to below. In the 1976 December meeting, at the request of the 1976 workshop and ICSSR, Prof. C. T. Kurien undertook an evaluation of three inter disciplinary research methodology workshops held in 1974, 1975 and 1976 and on this basis, the meeting came to the conclusion that they had opened up social scientists' understanding of poverty and helped them in learning each other's language, methods and tools/and emphasised the need for interdisciplinarity. The meeting recommended that in future workshops (a) multi disciplinary studies and specific themes be the subject matter and (b) the membership be smaller and the time duration shorter.

4. 2. Annual 6 weeks workshops were organised in May/June with the financial participation of the ICSSR on Economic Research methodology for 35 Ph.D students from the Southern Universities with a view to improving the level of Ph.D research in the universities as follows:

1971 at Madras Christian College, Madras University, Director C. T. Kurien

1972 at Andhra University, Waltair, Director B. Sarveswara Rao

1973 at Karnataka University, Dharwar, Director T. K. Meti

As a result of these workshops and the recommendations made by Annual meeting of Heads of Social Science Departments of the Southem Universities, research methodology has become part of the Ph. D. or pre Ph. D. programme in all the Universities of the South and so these unidisciplinary research methodology workshops have been discontinued.

4. 3. As a result from 1974, the Institute with the help of ICSSR organised an annual interdisciplinary research methodology workshop for 7-10 days for 35 Professors of the Social Sciences from the Southern Universities, centering discussion around the problems of poverty in the following manner:

May 1974—Who are the Poor ? Osmania University, Hyderabad.

May 1975—Regional Planning as a means of removing Poverty—Mysore University, Mysore.

May 1976—Indicators of Rural levels of living Tamil Nadu Agricultural University Coimbatore.

4. 4. In each of the last 3 workshops, a frame work for inter university inter disciplinary research was established on—(a) identification of the poor, (b) regional planning to remove poverty and (c) indicators of rural levels of living. The Institute has not so far succeeded in launching any of these research projects, probably because of the need, which has not been met, to appoint a full time Research Associate to head each project.

5. Documentation and Publication :

5. 1. The documentation and library services of the Institute have been gradually built up to include 12,000 volumes and 30 Indian and foreign journals. In 1976 a special effort has been made to increase the book collection by purchase of 200 volumes.

5. 2. The publications programme of the Institute has involved :

5. 2. 1. Monthly Bulletin. A monthly journal setting forth the major developments in the economic education and scientific fields in the State, the country and the world is issued every month under the editorship of the Director. Six volumes for the six years 1971-76 have been completed. There are 520 copies of the Bulletin printed, half of which are for subscribers and the other half on exchange and under the free list.

5. 2. 2. As a review of the studies undertaken by the Institute (referred to in para 2.1), the MIDS publication series during the six years comprise :

1. Income Earning Trends and Social Status of the Harijan Community—By A. Vagiswari
2. Economics of Dry Farming in Tamil Nadu—By R. K. Sampath & Jayalakshmi Ganesan
3. Nutrition in Tamil Nadu—By Rajammal Devadoss
4. A Guide to Research in Economics—By C. T. Kurien
5. Land Reforms in Tamil Nadu—By G. Venkataramani
6. Poverty and Wage goods supply in Tamil Nadu—By M. Ramamurthy
7. Women's Welfare in Tamil Nadu—By K. G. Rama
8. Minor Irrigation in Tamil Nadu—By G. Venkataramani
9. Small Fishermen in Tamil Nadu—By C. Selvaraj
10. Rural Employment in Tamil Nadu—By J. Viswanathamurthy & C. L. Narasimhan
11. Operational Efficiency of Small & Medium Plantation in Tamil Nadu—By R. Ethiraj
12. Rural Housing in Tamil Nadu—By V. Rengarajan.

5. 2. 3. Other publications.

1. Plan Implementation — Problems and Prospects of the Fifth Plan—By Malcolm S. Adiseshiah
2. Techniques of Perspectives Planning—By Malcolm S. Adiseshiah

3. Educational Problems of Scheduled Castes and Scheduled Tribes—By S. Ramanathan

4. Employment Profile of Scheduled Castes and Scheduled Tribes–By S. Ramanathan

5. Social Science in Retrospect and Prospect — By Malcolm S. Adiseshiah

6. Towards a Functional Learning Society–By Malcolm S. Adiseshiah

7. Learning To Do—By Malcolm S. Adiseshiah

8. Manual of Literacy Statistics—By Malcolm S. Adiseshiah

9. Indian Economic Journal Conference Number 1974—By Malcolm S. Adiseshiah

6. Organisation and Structure:

6. 1. During 1976 the government of India through the Indian Council of Social Science Research sent a mission headed by Prof. Lakdawala to study the possibility of developing the Institute into a National Institute. The Mission noted that the Director had gifted to the Institute its land and buildings, its library, furniture and equipment and a cash endowment of Rs. 3.5 lakhs to be increased to Rs. 5 lakhs by the end of 1978 and an annual income of Rs. 60,000 during his life time. It is recommended that the Government of India through the ICSSR and the State Government contribute to the financing of the Institute at the rate of Rs. 50,000 for 1975–76, Rs. one lakh for each of the 2 years 1976–77 and 1977–78, and Rs. 3 lakhs for 1978–79. For the Sixth Plan the Institute can plan for an annual grant of Rs. 5 lakhs from the two sources, contributed on 50:50 basis. The Director in consultation with the Trustees accepted this offer and proposed that he retire from the Directorship in July 1978, when a full time Director would be appointed. Dr. C. T. Kurien has been invited to the Directorship. A Governing Council comprising ICSSR, the State Government, Universities and social scientists will direct the Institute. The entire trust property and endowment is turned over to the Institute and its Governing Council. The ICSSR recommended acceptance of the mission findings and the government of India and the government of Tamil Nadu have accepted the new structure proposed. The Institute has received from both parties the 1975–76 grant and from ICSSR the 1976–77 grant in instalments. The State Government is in the process of clarifying the procedure before contributing its share. The Director on behalf of the Trustees express his satisfaction with the new framework of the Institute which provides it with an assured and expanding future.

6. 2. The University of Madras and the Institute have entered into an agreement under which the Institute is recognised by the University for training M. Phil and Ph. D. scholars for the University.

INCOME AND EXPENDITURE FOR THE YEAR ENDED 31st MARCH 1976

EXPENDITURE			INCOME	
To Salaries		20,679.37	By Interest received	24,800.33
,, Printing & Stationery		16,773.41	,, Miscellaneous income	860.00
,, Books & Periodicals		1,279.88	,, Subscription for MIDS Bulletin	403.33
,, Postage & Telegrams		1,817.80	,, Excess of Expenditure over income	44,171.94
,, Telephone charges		1,326.55		
,, Electricity charges		1,167.66		
,, General Expenses		6,330.03		
,, Repairs & Maintenance		623.70		
,, Insurance Premium		500.00		
,, Water Tax		43.25		
,, Conveyance		63.45		
,, Bank charges		17.10		
,, Audit fee		450.00		
,, Social Security Scheme	880.00			
Less Employees Contribution	357.60	522.50		
,, Travelling Expenses		266.90		
,, **Depreciation:**				
Books 25%	14,063.00			
Building 2½%	1,334.00			
Furniture 10%	2,165.00			
Elec. Fittings 10%	302.00			
Air Conditioner 15%	510.00	18,374.00		
		70,235.60		70,235.60

Note :

Certified that the expenditure incurred by the Madras Institute of Development Studies for the year 1975–76 has been verified with reference to the account records and vouchers maintained by the Institute and has been found to be correct. It is also certified that the grant–in–aid given by the I.C.S.S.R., New Delhi, and Govt. of Tamil Nadu has been utilised for the purpose for which it has been sanctioned by them.

The institute is carrying over a sum of Rs. 2,914/06 from the grant of Rs. 25,000/- received from I. C. C. S. R. for the next year.

(Sd.) GEORGE JOSEPH
For GeorgeJoseph & Co.

BALANCE SHEET AS AT 31st MARCH 1975

LIABILITIES

Donors, Trustees & Endownments		
as per last Balance Sheet	4,10,405.49	
Add Additions during the year	77,032.83	4,87,438.32
Income & Expenditure A/c		
Excess of Expenditure over Income	44,171.94	44,171.94
		4,43,266.38
Monograph on Kurchiya Project	300.00	
International Adult Education	1,156.01	
Ascociation of A.S.S. Research Council	500.00	
Special Seminar on Development of Education in Tamil Nadu	22,491.20	
Andhra University Social Science Committee	100.00	
Security Deposit for Building	2,000.00	26,547.21
Outstanding Liabilities:		
Audit Fees	300.00	
" " 75/76	450.00	
Salary for March 1976	1,372.50	2,122.50
		4,71,936.09

ASSETS

Building	53,325.00	
Less: Depreciation	1,334.00	51,991.00
Books	56,250.00	
Less: Depreciation	14,063.00	42,187.00
Furniture & Fittings	21,655.00	
Less: Depreciation	2,165.00	19,490.00
Electrical Fittings	3,302.00	
Less: Depreciation	302.00	3,000.00
Air Conditioner	3,392.00	
Less: Depreciation	510.00	2,882.00
Deposits & Advances:		
Fixed Deposit	2,65,000.00	
Telephone Deposit	360.00	
Electricity Deposit	260.00	
Electricity Security Deposit	360.00	
A.S.M. Abdul Khader & Co.	235.00	2,66,215.00
Outstanding Income:		
Interest on F.D. for March 76		2,000.00
Cash & Bank Balances:		
Cash on hand	1,976.97	
Cash in Bank	57,065.76	
Recurring Deposit	24,000.00	
S. B. A/c. at I.O.B.	766.50	
Current A/c. with SBI	361.86	84,171.09
		4,71,936.09

Sd/- GEORGE JOSEPH
For Jeorge Joseph & Co.
CHATERERED ACCOUNTANTS.

THE SEVENTH CENSUS OF SOCIAL SCIENCE RESEARCH IN TAMIL NADU 1977

The seventh census (1977) of Social Science research in Tamil Nadu conducted by the Institute follows the Sixth census reported in the Bulletin, Vol. VI Nos. 5 and 6, May–June issue of 1976.

In order to preserve some uniformity in reporting and continuity, the questionnaire issued in February 1977 has been in the same format as in previous years and was addressed to six Southern Universities, including the Indian Institute of Technology, 2 departments of the Government of Tamil Nadu, one Institute of Rural Higher Education, 3 research institutes in the city, 24 colleges and the Directorate of Census, Government of India, Madras. The total number of reports received this year is 141 under 14 different disciplines as against 128 reports under 15 different disciplines received in 1976. A tabular statement showing the number of reports under various disciplines during the last seven years (1971–1977) is given below:

Sl. No.	Discipline	1971	1972	1973	1974	1975	1976	1977
1.	Economics	85	42	125	51	41	33	37
2.	Agricultural Economics & Co-operation	—	—	49	22	18	22	23
3.	Economic History	—	—	—	1	—	–	2
4.	Commerce	—	—	5	2	1	2	11
5.	Education	—	5	2	2	1	5	4
6.	Criminology	—	—	2	2	3	3	1
7.	Geography	—	—	1	4	6	2	9
8.	History	8	8	4	9	16	0	8
9.	Politics & Public Administration	—	—	1	2	2	—	—
10.	Psychology	31	11	14	12	15	5	10
11.	Social Work	—	5	7	6	8	6	1
12.	Sociology	7	4	2	6	2	6	3
13.	Anthropology	3	—	—	—	—	1	—
14.	Home Science	44	36	—	—	—	—	29
15.	Linguistics	—	—	56	—	—	1	—

Sl. No.	Discipline	1971	1972	1973	1974	1975	1976	1977
16.	Demography	—	—	—	—	1	3	2
17.	Town & Country planning	—	—	—	—	2	—	—
18.	Multidisciplinary	—	—	—	—	1	—	—
19.	Philosophy	—	—	—	—	—	1	—
20.	Physical Education	—	—	—	—	—	8	—
21.	Others	—	4	2	—	—	—	2
	Total	178	115	270	119	117	128	142

It will be seen from the statement that, as in previous years Economics heads the list with 37 reports, followed by Home Science as a close second with 29 reports. Under Agricultural Economics there are 23 reports, Commerce 11, Psychology 10, Geography 9, History 8, Education and Sociology 3 each, Economic History and Demography 2 each, 2 reports which could not be included under the regular disciplines are shown as "others" and one report each in criminology and social work. As compared to 33 Nil reports in 1976, the number in 1977 is 3.

A pattern which emerges from the reporting is that research work is being done only in one or two disciplines in social sciences in colleges. (It may be that the other departments have failed to report). It is also seen from the figures for the seven years that only research in four disciplines—Economics, History, Psychology and Sociology has been reported every year. The dearth in research work is evident in politics, Economic History and Anthropology. The largest number of research work items reported from an institution in a single discipline is from Sri Avinashilingam Home Science College for Women, Coimbatore, with 28 reports in Home Science.

Out of the 141 reports, 107 are degree oriented which is nearly 76 per cent. Of the 107 reports, 50 are for the Ph.D. degree and 57 for post-graduate degrees of M.A., M.Cop., M.S. etc. Both for the M.Cop. degree of the college of Rural Higher Education, Coimbatore and M.Sc. of the Sri Avinashilingam College for Women, Coimbatore, a research dissertation is a compulsory item for the degree. This pattern of encouraging research at post-graduate level may be followed in all degrees in social sciences. The balance 34 items of research, out of the 141 reports, have been sponsored by Government Departments, U. G. C., or undertaken voluntarily by some institution. The near absence of ICSSR sponsored research in the State is noted with regret.

Two major aspects in research in social sciences which may be stressed again are: (i) the need for interdisciplinary methodology approach and (2) the necessity to take up some fundamental research in the social sciences. The former has been stressed in the meetings of the Heads of Departments of Social Sciences held annually at the Institute. This approach is to be developed by the supervisory

Professors who could draw up some methodology in this regard.

Another suggestion which could be made is that in each institution a programme of research could be drawn up for 3 to 5 years by consultation among the social scientists and the research work guided accordinlgy.

ECONOMICS

Presidency College, Madras

1. To prepare an economic frame-work to Tamil Nadu economy and evolve new strategies for growth and redistribution of income.

Econometric methods used to build a simplified theoretical model capable of empirical implementations.

Commencement	1-4-1976
Completion	—
Degree	—

2. Planning

A reorientation of policy and planning methods in India. Formulation of new designs of planning models with objectives of (1) incorporating asset formation and accumulation by different groups and (2) tracing the effect of wage linkages between poverty groups and the rest of the economy.

By empirical methods and interpretation of statistical data.

Commencement	1-10-1973
Completion	1-10-1977
Degree	Ph.D.

3. Indo-Soviet Trade

To find out the trend of trade in view of industrialisation with reference to U. S. S. R.

Secondary data used

Commencement	1-10-1973
Completion	1-10-1977
Degree	Ph.D.

4. Labour rural mobility in Tamil Nadu with special reference to Tirunelveli District.

Commencement	1-4-1975
Completion	1-4-1979
Degree	—

5. Public expenditure on human resources especially on Education in Tamil Nadu.

To determine the cost-benefit ratio, the importance of human resource development and to analyse the ways and means of utilising the human potential in Tamil Nadu.

By case study method.

Commencement	1-8-1975
Completion	31-7-1979
Degree	Ph.D.

6. Mobilisation of human resources for integrated rural development in India.

To overcome the population explosion problem, to solve the unemployment

problem, to utilise the unemployed and underemployed of rural areas in productive activities, to evolve right type of techniques in the methods of production and to exploit all resources available with the adoption of manpower planning.

Commencement	1-8-1975
Completion	31-7-1979
Degree	Ph.D.

7. Small scale industry and economic development of Ta Nadu.

To study the growth prospects of small scale industries and their contribution to the economic development of Tamil Nadu.

Secondary data used.

Commencement	1-4-1975
Completion	7-4-1979
Degree	Ph.D.

University of Madras

8. Currency problem in India with special reference to Madras Mint.

To study the evolution of coinage in India and its problems, the relation of Madras Mint in the development of currency in Madras Presidency and how far Madras Presidency paved the way for the uniformity of currency.

By survey of literature and manuscript and secondary data used.

Commencement	August 1974
Completion	July 1979
Degree	Ph.D.

9. Labour economics

To enquire into the genesis and growth of Trade Union Movement in Madras.

Secondary data and manuscript, records etc. used.

Commencement	July 1975
Completion	July 1979
Degree	Ph.D.

Madras Christian College, Tambaram.

10. Entrepreneurship in Tamil Nadu.

To identify the factors which influence the supply and success of entrepreneurship and to indicate their relative roles in the development of entrepreneurship in Tamil Nadu.

Utilising secondary data to study the historical trends in entrepreneurship in Tamil Nadu and depth studies on ten firms using personal interview method.

Commencement	Jan. 1972
Completion	—
Degree	Ph.D.

11. Economics of Education

An evaluation of free education in Tamil Nadu—Cost–Benefit analysis from secondary data.

Commencement	June 1977
Completion	May 1979
Degree	M.Phil.

12. Urbanisation in Tamil Nadu.

To describe and explain the marked variation in urbanisation between dry and wet regions of the State.

Regional analysis and location theory on the basis of census data (primarily) of 1950, 1960 and 1970.

Commencement	Feb. 1976
Completion	Feb. 1980
Degree	Ph.D.

Vivekananda College, Madras

13. Inflation in India—

Structural or Monetary phenomenon.

A detailed and dis-aggregated analysis along the following lines (as was adopted in the case of England by Crocket) can be undertaken:- (1) Monetary aggregates and expenditure aggregates, (2) Monetary aggregates and expenditure components, (3) Monetary components and expenditure aggregates, and (4) Monetary components and expenditure components. If possible, the influence of money on economic variables under alternative sources of monetary expansion, like open market operations, deficit financing etc. can be studied. A price behaviour model can be constructed by analysing (1) the behaviour of aggregate demand with special emphasis on the role of money and (2) the behaviour of aggregate supply—an emphasis on major components like agricultural production, imports etc.

Commencement	Aug. 1974
Completion	Aug. 1978
Degree	Ph.D.

Institute for Techno - Economic Studies, Madras

14. Study on the indebtedness of Seheduled Tribes in Tamil Nadu.

To examine the existing provisions of the relevant legislative measures and to assess their socio-economic impact on the welfare of the tribal population and to find out whether there is any need to supplement or repeal them in respect of land reforms, debt redemption and money lending, to suggest if any scaling down of past debts is called for and to examine whether bonded or forced labour exists in overt or convert forms among the scheduled tribes selected.

The scope, approach and content of the research programme would cover the study of tribal as well as the non-tribal households to find out whether the scheduled tribes need any protective measures. Therefore, non-tribal households as 'controls' in the selected centres included.

Commencement	16-12-1976
Completion	30-3-1977
Degree	Nil.

Sponsored by the Director of Harijan Welfare.

15. Marketing facilities in tribal areas of Tamil Nadu.

To study the evolution of marketing as an institution among the scheduled tribes selected, the existing marketing structure and practices among the Tribals. To assess how far indebtedness of the tribals is responsible for preventing the breaking of self sufficiency and closed character of the tribal economy. To envisage the type of marketing organisation that would link their individual economies with the general stream of trade and evolve a price policy.

Commencement	16-12-1976
Completion	30-3-1977
Degree	*Nil.*

Sponsored by the Director of Harijan welfare.

16. Credit plan in Salem and Dharmapuri Districts.

To estimate the short and medium term credit requirements of imporant sectors of the economy of Dharmapuri District in the next five years, to assess the existing credit supply potential, to estimate the share of the organised Commercial Banking sector and to identify bankable 'short' term growth oriented schemes in the district which will bear fruit in the next five years and to draw up a credit plan for the district.

Data regarding population, occupational pattern, irrigation, cropping etc. collected from official records and information regarding credit advanced, number of persons etc. from the branches of the nationalised and non-nationalised banks. An analysis of these data brought out that the district fell into five homogeneous Geo-economic regions. Five representative blocks were then selected from each region for an indepth study. The agricultural and industrial officers, specialised agencis were contacted. The farmers contacted were on a random basis.

Commencement	1-11-1976
Completion	1-3-1977
Degree	*Nil.*

Sponsored by the Indian Bank

17. *Socio-economic impacts* of horse racing in Tamil Nadu.

To examine the social, economic and other impacts of horse racing on various sectors of society, to study the profile of the population which attends horse racing and engages in betting and to study whether it is possible to mitigate the undesirable consequences and other related issues.

Methods include (1) Desk Research to study the records of the race club, its history, betting, finances, etc. (2) Selective Interviews of owners, trainers, jockeys, (3) Interview of race goers on five consecutive racing days with a short questionnaire, (4) a follow up investigation with an elaborate questionnaire and (5) study of a control group of non-race-goers.

Commencement	15-8-1976
Completion	15-2-1977
Degree	Nil

Sponsored by the Tamil Nadu Committee on Horse Racing, Government of Tamil Nadu.

University of Madras

18. Property rights, Indian constitution and economic change.

To compare the evolution of property rights theories and institutions in the West and India, to trace the role of property rights in the Indian constitution, and to analyse the economic effects of the changes in property rights in the last quarter century.

Commencement	1-10-1976
Completion	—
Degree	Ph.D.

19. *Institutional financing of small* scale industries in Tamil Nadu.

Reported in the Bulletin Vol. VI Nos. 5 & 6, page S.7

20. The trends in natural rubber prices and its impact on Area, Employment and Production—a case study of Sri Lanka's rubber industry.

Reported in the Bulletin Vol. VI Nos. 5 & 6 page S.6

21. Socio-economic change and development of education in Tamil Nadu.

To study whether education has led to a better outlook, social change and overall development of the economy.

Based on information found in Government records, text-books and secondary data from the Statistics Department.

Commencement	1-4-1974
Completion	—
Degree	Ph.D.

22. Housing for low income group in major metropolitan cities of India with special reference tp Madras City.

To study the extent of demand and supply of housing for LIG and to make future projections and to review the scheme for LIG housing.

Secondary data collection from different agencies for LIG housing and primary data by field survey of LIG housing beneficiaries and non-beneficiaries.

Commencement	8-9-1976
Completion	—
Degree	Ph.D.

23. Road transport and socio-economic change.

To assess the role of transport in promoting economic development.

Empirical study.

Commencement	22-9-1976
Completion	—
Degree	Ph.D.

24. An economic study of environmental pollution with special reference to the present phase of Indian industrialisation.

To estimate cost of damages caused by pollution and the amounts spent by various industries for control equipments, to estimate the cost of pollution abatement to the total cost of production and cost of pollution damages to residential property values, its effect on house rent and its effect on sites where industries are to be newly located.

By use of primary data collected by personal investigation in polluted areas of Madras city and by use of questionnaire for estimating the cost of pollution abatement and the cost-benefit approach to air pollution control.

Commencement	1-9-1976
Completion	—
Degree	Ph.D.

25. Workers' participation in management.

To assess the economic validity of the scheme.

By use of primary and secondary data and study of the working of the scheme in some industries.

Commencement	1-9-1976
Completion	—
Degree	Ph.D.

Institute of Rural Health and Family Planning and Gandhigram Rural Institute, Gandhigram.

26. A cost benefit analysis of Family Planning Programmes in Madurai District.

To study the economic impact of the programme and its feasibility, the total number of births prevented and unit cost the progress of the programme and the socio-economic characteristics of the adopters.

By the couple years of protection index the demographic impact of the different family planning methods in Madurai district—Vasectomy, Tubectomy and IUDC in terms of births prevented in total and method-wise—was estimated. Cost per birth prevented and per method was arrived at. From an estimated monetary benefit of a foregone birth, total benefits and the cost-benefit ratio of the programme since 1969-70 to 1972-73 were projected. Socio-economic characteristics of the adopters were studied from a 10 per cent random sample.

Commencement	October 1971
Completion	October 1973
Degree	M.Lit.

National College, Srirangam, Tiruchirapalli.

27. Indo-Soviet trade—a perspective

To test the hypotheses:- (1) India's trade with U.S.S.R. has not been to our advantage, (2) We are paying a high price for our imports from U.S.S.R., (3) There is no net gain in our exports since U.S.S.R. is entering switch trade and (4) We are losing our traditional markets.

By analysing the unit value indices of exports to U.S.S.R. with the rest of the world and the terms of trade, it was proved that the hypotheses are wrong and that the trade with U.S.S.R. has been beneficial to India.

Commencement	June 1976
Completion	Sept. '76
Degree	Nil

28. The impact of the increase in the prices of inputs in agricultural production and profitability—a case study in the production of paddy in a Tamil Nadu village.

To test the hypotheses: (1) The increase in the prices of inputs have increased the costs enormously, (2) Because of cost hike, production has become unremunerative, (3) Though there have been improvements in production, the profit margin is reduced and (4) The marginal farmers are affected most by the cost hike.

Primary data collected from 50 households in Neringjilakudi, a village in Lalgudi taluk, Tiruchirapalli district and secondary data also used. The facts justified the hypotheses. A high degree of negative correlation was established between cost and production and cost and profit changes. The years 1970-71 and 1975-76 were taken into account.

Commencement June 1976
Completion Sept. 1976
Degree Nil

Madras Institute of Development Studies

29. Educational profile of jobs in Tamil Nadu.

There is a growing variance between the educational qualifications of potential job holders and the educational requirements of various jobs. The skills required for particular jobs are quite different from what the average graduate brings to it. A number of job descriptions have been examined in order to identify the precise educational qualifications needed for a few types of jobs and the pattern of recruitment examined.

Completed and to be published in 1977.

30. Unemployment of ITI graduates.

Particulars received by schedule of 849 unemployed craftsmen were analysed to examine the duration of their unemployment, period of registration with the Employment Exchanges, the number of unemployed in each craft, age-wise distribution, whether rural or urban residents, willingness to take up self-employment etc. On the basis of the analysis recommendations made for reducing unemployment, adjustment of ITI courses etc.

Completed and under print.

31. Link Road investments in Tamil Nadu.

In view of the high percentage of allocation of funds by Government under link roads, an evaluation of the impact of link roads on key areas of the rural economy in terms of increased area under cultivation, improved transport of products to markets and increase in vehicular traffic is made and the cost-benefit ratio worked out in order to consider whether other forms of alternative investments like minor irrigation etc. would be more gainful.

Study based on secondary data.
Completed and under print.

32. Possibilities of crop rotation in Thanjavur district.

To ascertain the term trends in area and production of paddy in Thanjavur district, use of fertilisers, to evaluate the cost and returns from Kuruvai, Thaladi and Samba, the diversification of cropping patterns, to examine the resource efficiencies involved through Cobb-Douglas functions for paddy and sugarcane, to suggest an ideal cropping partern through Linear Programming and make recommendations.

Study by secondary data.
Completed and under print

33. Mechanization in Agriculture in Tamil Nadu.

To Study the impact of mechanization on agricultural production and labour.

Empirical study based on secondary data, using correlation coefficient and production function.

Completed

34. Economics of Sugarcane technology in Tamil Nadu.

To compare, over space and time, yields and recovery percentages of the sugarcane crop, to study through economic analysis the cost-benefit ratios and production function models to establish the claims of sugarcane for scarce investible funds and its validity in relation to the costs and yields of alternative crop varieties and study the possibilities of increasing sugarcane production and export.

Study on secondary data.
Completed.

35. Commercial cultivation of vegetables in Tamil Nadu.

To study the area and varieties of vegetables produced at present and consider the feasibility of production and marketing on a commercial basis.

To be completed in 1977.

36. Tribal Welfare in Salem District and

37. Tribal Welfare in Kalrayan Hills, South Arcot District.

These two studies are on the role of voluntary agencies and Government organisations in developing tribal areas in Salem and Kalrayan Hills, South Arcot.

The studies are by collection of primary data using interview schedules for selected samples of tribal groups in selected areas and control groups and by information collected from Government organisation.

Study in Salem district completed and that in Kalrayan Hills to be completed this year.

AGRICULTURAL ECONOMICS AND CO-OPERATION

Tamil Nadu Agricultural University, Coimbatore.

38 Operational research project for rural development in Dharmapuri district.

The study had its focus on the nature of the existing resource base and structure, the bottlenecks and possibilities for alternate system of farming to increase income production and employment by scientific reorientation of the current crop pattern with existing resources.

Commencement	1975
Completion	1976
Degree	Nil

39. A study of growth pattern of labour force in Coimbatore taluk.

To identify determinants of growth of labour force, investigate the pattern of employment and the extent of unemployment.

25 families each from 4 villages in Coimbatore taluk were selected at random for the study.

Commencement	1975
Completion	1976
Degree	Nil

40. Economic enquiry into the problems of dairy farming in Coimbatore taluk.

To study the production pattern and estimate the cost of production, the methods of cost of production and the methods of disposal of products and relative cost structure.

The study was conducted at three levels i.e. farm level, intermediaries levels and dairy institution level.

Commencement	1975
Completion	1976
Degree	Nil

41. The study of demand and supply of vegetables in Coimbatore city.

To estimate demand and supply of vegetables, the seasonal variations and causes thereof. An analysis of consumption in better placed households showed that 5.5 per cent of the income was spent on vegetables and that the Chinthamani super market supplied nearly 15–18 per cent of the daily demands.

Commencement	1975
Completion	1976
Degree	Nil

42. An economic appraisal of Land Development Bank finance in Kancheepuram taluk Tamil Nadu.

To estimate the rate of return generated in different types of projects financed by the Bank, to measure the rate of growth of the farm and estimate the changes in the rural economy, especially, of employment potential and income distribution.

The study of 200 farms in Kancheepuram, revealed that of all investments, minor irrigation yielded the higher rate of return followed by land reclamation and farm mechanisation.

Commencement	1971
Completion	1976
Degree	Nil.

43. Increasing income, production and employment in Cauvery Basin.

The study was undertaken in the region comprising Thanjavur, Mannargudi and Pattukottai taluks of 210 farms located in 9 important soil series.

The study suggested that resource development reorganisation in the short run and resource development and management in the long run would stimulate larger increases in production, income and employment.

Commencement	1971
Completion	1976
Degree	Nil.

44. Employment, Earnings and levels of living of landless agricultural labour households.

To estimate the levels of employment, unemployment, and underemployment, to determine the income level, pattern of income and income distribution and analyse the levels of living of landless labour household. 150 labour households spread in 6 villages of Annur block were visited.

The study showed that the average days of employment was 195, only 25.49 per cent was employed more than 312 days and 65 per cent were employed less than 280 days.

Commencement	1975
Completion	1976
Degree	Nil.

45. Study on water-resource management in garden land agriculture.

To estimate the cost of irrigation for different crops under wells of different depths, the cost of irrigation vis-a-vis farm size and determine the optimum crop mix to maximise farm income with special reference to irrigation water. Investigation was held in 96 farms spread in 12 villages of Coimbatore taluk.

The study revealed that under the present conditions of factor product price ratios, it is not advisable to deepen wells beyond a depth of 132'. Optimum farm plan obtained through programming indicated that growing of less water consuming crops such as cotton, ragi, maize, onion and a herd of milch animals would augment farm income.

Commencement	1975
Completion	1976
Degree	Nil.

College of Rural Higher Education, Coimbatore

46. An assessment of the working of the Udamalpet Co-operative Primary Land Development Bank Ltd., Coimbatore district.

To assess the working of the Bank in terms of raising of resources, nature and extent of loan and timeliness and adequacy of loans to members. Field survey method was used for collection of data covering a sample of 75 farmers chosen on a random basis from 3 villages using two schedules vis.—a bank schedule and an interview schedule for the respondents, by personal interview. (The criteria for the selection of villages was the extent of membership—maximum average and minimum).

Commencement	June 1976
Completion	March 1977
Degree	M.Cop.

47. A study on the pattern of agricultural financing by State Bank of India, in Alandurai, an adopted village in Coimbatore district.

To study the extent and nature of loans, to investigate into the pattern of beneficiaries and identify the problems and difficulties in securing and repayment of loans.

An empirical study covering a sample of 75 farmers using Field Survey Method. A Bank schedule and an interview schedule were used for collecting data by personal interview.

Commencement	June 1976
Completion	March 1977
Degree	M.Cop.

48. An assessment of the working of the Dindigul Lock Workers' Industrial Co-operative Society Ltd., Madurai district.

To assess the general working of the Society, to study the socio-economic condition of its members and the various services availed by the members and their satisfaction.

Census Method adopted. Out of the 45 members, 42 were interviewed—the

whereabouts of the others were not known.

Commencement	June 1976
Completion	March 1977
Degree	M.Cop.

49. A study on member-participation, in the activities of the Palayamkottai Urban Co-operative Bank, Tirunelveli district.

To study the nature and extent of and the socio-economic factors responsible for members' participation.

The survey method and personal interview technique were used with two schedules, one for the Bank and the other for the members. 75 members selected on simple random basis.

Commencement	June 1976
Completion	March 1977
Degree	M.Cop.

50. A study on member satisfaction in the services of the Tiruchengode Co-operative Marketting Society Ltd., Salem district.

To study the nature and extent of services rendered by the Society to the members, their satisfaction and to study statistically the relationship between the socio-economic conditions and the extent of services received and their satisfaction.

Survey method and personal interview technique were adopted for collecting data with a schedule for the society and one for the members. Three villages selected on the basis of the distance to the Headquarters of the Society and 75 members by way of satisfied proportionate random sampling.

Commencement	June 1976
Completion	March 1977
Degree	M.Cop.

51. A study of Personal Management in the Nilgiris Co-operative Enterprise, Ootacamund, The Nilgiris.

To analyse the personnel problems of employees, the personnel policies adopted by the selected unit and to suggest measures for improvement of personnnel management.

Primary data from employees and records and documents collected from the society using census methods for selection of employees and purposive sampling method for selection of the society. A separate schedule was prepared for the society and an interview schedule for employees and officers.

Commencement	June 1976
Completion	March 1977
Degree	M.Cop.

52. A study of the consequences of the Debt Moratorium on the borrowings and repayment of rural households in Sathyamangalam Block, Coimbatore district.

To study the nature and extent of indebtedness, among the selected families in the village in relation to the socio-economic characteristics of the households of agriculturists and non-agriculturists and to find out the extent of awareness, attitude and knowledge regarding Debt Moratorium and the consequences (positive and negative) of Debt Moratorium.

Survey method and personal interview technique adopted using a village schedule and a household interview schedule with a two stage sampling procedure. Purposive sampling followed for selection of village and simple random sampling for respondents out of 100 households taking 75 agriculturists 20 non-agriculturists and 5 agricultural labourers.

Commencement	June 1976
Completion	March 1977
Degree	M. Cop.

53. An assessment of the working of the Bodinayakanur Potters' Co-operative Society Ltd.,

To study the general working of the Society, the socio-economic conditions of its members and to assess the various activities of the Society and services awaited by the members and their satisfaction.

Case study method and interview technique were adopted. Census method adopted. Out of the 133 members on the role, only 52 were transacting business with the society and the whereabouts of the others not known.

Commencement	June 1976
Completion	March 1977
Degree	M. Cop.

54. A study on the economics of Sowdeswari-Mini-Super Market (a unit of Sri. Ramalinga Sowdeswari Co-operative Stores Ltd.,) Coimbatore.

To analyse the economics of purchases and sales by the Mini-Super Market, its profit and loss account and balance sheet, the economics of its administration and to study the members' use of Mini-Super Market, their opinion and views with regard to its various economics.

Case study method and personal interview technique adopted using a schedule for the Mini-Super Market and interview schedule for members selecting 75 members by convenience sampling.

Commencement	June 1976
Completion	March 1977
Degree	M. Cop.

55. A study on the economics of Ponni Co-operative Super Market in Salem.

Objectives, methodology, tools, etc. used as in item 54.

Commencement	June 1976
Completion	March 1977
Degree	M. Cop.

56. A study of awareness, knowledge and attitude towards the 20 - point Economic Programme among the weaker sections and to identify the relation between selected socio-economic characteristics of the weaker sections and their awareness, knowledge and attitude towards the 20-point programme.

Field survey and personal interview techniques adopted with a two stage sampling procedure using purposive sampling. Out of the 380 weaker section households in the selected village 100 respondents (32 small farmers, 22 marginal farmers, 42 agricultural labourers and 4 artisans) were selected.

Commencement	June 1976
Completion	March 1977
Degree	M. Cop.

57. A study on factors responsible for the success or otherwise of fishermen co-operatives in Killyoor Block, Kanyakumari district.

To study the *general* working of the society, the socio-economic conditions of the members, the various benefits derived, the problems faced by the society and the factors responsible for the success. Two co-operative units at primary level viz. the Vallavilai and Inayam Fishermen Co-operative Societies at Killyoor block were selected. Field survey method and personal interview technique adopted for data collection from 100 members selected by random sampling.

Commencement	June 1976
Completion	March 1977
Degree	M. Cop.

58. A study in the operational efficiency of Salem City Co-operative Milk Supply Union, Salem.

To study the operational efficiency in the collection and distribution of milk and analyse the cost thereof.

Field survey and documentary research methods were used viz. primary data from the field and secondary data from the union's records. Purposive sample method used for selection of the milk union and convenience sampling for member societies, individual members, institutional members and customers. Three separate comprehensive schedules were used for collection of data from the union, individual members and customers.

Commencement	June 1976
Completion	March 1977
Degree	M. Cop.

The Gandhigram Rural Institute, Gandhigram.

59. An analysis of cropping pattern in Tamil Nadu between 1951–52 and 1973–74

To analyse the trend of area under *different crops,* to *identify the crop* shifts and their extent as well as the factors influencing such shifts, to assess the factoral impacts and to prescribe policy measures.

With the secondary data available for 23 years (1951–'74), the method of *comparative advantage along with* its degrees of dynamism is used to measure directional changes and extent in the cropping pattern *in the districts.* The influential variables are to be identified by the use of scatter diagrams and the techniques of correlation. Two sets of sample farmers—one from a typical wet area and one from a typical dry area – are interviewed to locate the decision-making points. The strength of the already identified variables is tested at the semi-micro level in six districts on a 50 per cent sample from each of the three dynamicity groups. At *the macro* (State) level the same is put to test through multiple regression.

Commencement	Dec. 1975
Completion	Dec. 1977
Degree	Ph. D.

60. Agricultural development and position of small farmers in Tamil Nadu.

To assess the agricultural returns and the quantum of marketable surplus of specific crops, to understand the relationship between farm income and level of

new technology and to ascertain the viability of the small farmers.

Using secondary data, the agricultural development of the State from 1960–61 to 1973–74 studied. Against this development, two samples of small farmers, one raising rainfed groundnut in Madurai and another irrigated paddy in Thanjavur were followed up during 1973–74 agricultural year to fix their relative positions in development efforts. A set of related hypotheses in the area of net income differences between the two sets, situation-wise, were statistically tested. Their viability statuses were compared and their technological absorption studied using farm practice scores.

Commencement	June 1973
Completion	August 1976
Degree	Ph. D.

ECONOMIC HISTORY

Indian Institute of Technology, Madras.

61. Some aspects of the economic policy of the East India Company in Madras 1784–1858 (completed)

Reported in the Bulletin, 1974, Vol. VI, No. 5 & 6, Page S. 15.

62. Emergence of Industrial labour force and progress of Trade Union movement in Madras 1925-1947.

To examine the factors which resulted in the emergence of industrial labour force and the factors which compelled them to come together and organise themselves to assert the rights and privileges of workers

Commencement	Sep. 1976
Completion	—
Degree	Nil

COMMERCE

Annamalai University

63. Development of Entrepreneurship in Tamil Nadu.

To study the problems in starting industries and the ways in which they were tackled.

By sending questionnaires and by personal interviews.

Commencement	17–9–1973
Completion	16–9–1978
Degree	Ph.D.

64. Small lorry operators in Tamil Nadu—a critical study.

To study their organisation, personal problems and efficiency of operations and formulate suggestions for their improvement.

By sample survey and case study

Commencement	Dec. 1974
Completion	Dec. 1979
Degree	Ph.D.

65. Vanaspathi Industry in India – a study of the problems of the Industry.

Reported in the Bulletin, 1976, Vol. VI, no. 5 & 6, page S. 12

66. Impact of multi-agency approach of rural credit in Thanjavur District.

To assess the impact of different agencies on rural credit, to find adequacies or inadequacies and suggest remedial measures.

By field work.

Commencement	1974
Completion	1979
Degree	Ph.D.

67. Deposit mobilisation by private sector, Banks in Tamil Nadu.

To study the pattern and growth of deposits in the private sector Banks and compare the same with those of the public sector and the effectiveness of various new deposit schemes introduced by the former and give suggestions for improvement.

By questionnaires, interviews, secondary data and sample study.

Commencement	7-10-1976
Completion	7-10-1979
Degree	Ph.D.

P. S. G. Arts College, Coimbatore

68. Productivity trend in the hosiery industry of Tamil Nadu.

To identify the relation between investment and productivity in the hosiery industry in Tamil Nadu.

By field survey and personal interview using comprehensive questionnaires.

Commencement	April 1976
Completion	April 1980
Degree	Ph.D.

69. Tamil Nadu Cement industry—a study in location factors.

To identify the role of location factors in the growth of Tamil Nadu Cement industry.

By field survey, interview schedule, secondary data and visit to all cement units using comprehensive questionnaire.

Commencement	1-4-1976
Completion	1-4-1980
Degree	Ph.D.

70. Role of location factors in the growth of the Coimbatore textile industry.

By questionnaire method, interview techniques, use of secondary data and field survey.

Commencement	28-7-1973
Completion	Dec. 1975
Degree	—

71. Organisation of agriculture for higher productivity — a management approach.

To study the scope of application of better management techniques in agriculture and evolve a better operation mix through integrated management.

Sampling 10 per cent of the agricultural population producing cash or food crops and with 1 to 30 acre farms.

Commencemnt	1-4-1976
Completion	1-4-1980
Degree	Ph.D.

72. A comparative study of industrial harmony in worker – owned and non-worker-owned industrial co-operatives in Coimbatore District.

To compare the degree of industrial harmony and identify the factors contributing to the differences in the degree of industrial harmony in the two types of industrial co-operatives and to offer suggestions for achieving a higher degree of industrial harmony.

Commencement	1-2-1976
Completion	—
Degree	Ph.D.

73. Working Capital management in textile industry.

To find out the pattern of working capital management and suggest better methods of management and devise an optional working capital model in respect of the spinning mills of Tamil Nadu.

By interview schedule, questionnaire and balance sheet data.

Commencement	1-2-1976
Completion	1-2-1980
Degree	Ph.D.

EDUCATION

Indian Institute of Technology, Madras.

74. Optimisation of productivity of our technical Institute.

To evolve a systems model for optimisation of productivity of our Institute such as IIT.

Systems analysis and synthesis of various subsystems — super imposition of a management information systems, taking into consideration the resource and other constraints. Delphi techniques, cross impact analysis and cost-benefit analysis will be employed.

Commencement	1976
Completion	1977
Degree	M.Sc.,

(Industrial Management)

75. Identifying national goals of undergraduate engineering education and determining the priorities of these goals for undergraduate engineering education in the coming decade.

The Delphi technique was used to encourage convergence of opinion on goals of undergraduate engineering education. Four Delphi rounds concluded for 109 panelists drawn from various engineering profession and placed in three sub-groups — Industry, Education and R and D., The elicited goal statements were treated like Likert - type items and weights given to five choices of rating. Frequencies of ratings, majority ratings, means, standard deviations, consensus percentages and correlation coefficients were calculated. At the end of the exercise, eleven high priority goals, eleven above average priority goals and eighteen average priority goals were identified for undergraduate engineering educations and implications discussed.

Commencement	Sept. 1975
Completion	Jan. 1977
Degree	Nil.

Madras Institute of Development Studies.

76. To study the existing pattern of rural primary education with special reference to enrolment, wastage and the socio-economic conditions which have a bearing on these phenomena and adult illiteracy in Tamil Nadu and make recommendations and suggest remedies.

Completed and under print.

77. Towards A Learning Society

On the basis of the original Perspective Plan Document, the statistical base has been extended to include projections up to 1986 with the corresponding changes in the body of the report.

Published in 1977.

CRIMINOLOGY

University of Madras

78. Mass media exposure and content preferences of delinquents and non-delinquents.

To investigate the differences and similarities in content preferences of delinquents and non-delinquents, the degree of association between the social characteristics and the delinquents' frequency of exposure pronounced and the areas in which the most and least pronounced differences are found.

The two universes to be studied namely the delinquents and non-delinquents are taken from the Approved Schools and Corporation Schools respectively in the age-group of 10-15 years in the academic ladder VI-VIII standards and in the socio-economic group of families with monthly incomes which do not exceed Rs. 500/-

Commencement	Oct. 1974
Completion	—
Degree	M. Litt.

GEOGRAPHY

University of Madras

79. Spatial pattern of Crimes in Madras City.

To find out the relationship between Crime and geographical factors, the spatial dynamics of Crime and the change in the pattern of Crime in Madras City.

Madras city data pertaining to selected property crimes and crimes against persons are to be collected for 5 years from 1972 - '76. Quantitative techniques like factor analysis, multivariate analysis have to be employed apart from mapping of Crimes

Commencement	1-4-1976
Completion	31-3-1980
Degree	Ph. D.

80. Transport systems of Tamil Nadu-Mass transit systems, Net work and flow analysis.

To study the coverage network which reflects the degree of development of the region, utilisation of the routes, identify transport efficiency regions, allocation study of the available transport facilities and requirments.

Primary and secondary data to be collected for network and flow analysis and application of principle of allocation model to find out the balance between demand and supply.

Commencement	Oct. 1974
Completion	Oct. 1978
Degree	Ph. D.

81. Gopichettypalayam Taluk—a study in the changes in agricultural land use.

To study the changes in agricultural land use during 1950–51 to 1970–71, the agricultural resource environments of the project and non–project area farms and to estimate the efficiency of agricultural resource utilisation on the project and non–project area farms.

By analysis of primary data using Cobb– Douglas Production function and secondary data using Variance Analysis, two–way classification and critical difference techniques.

Commencement	July 1971
Completion	January 1976
Degree	Ph. D.

82. Changing land use in the dry *regions of* Tamil Nadu – *A case study of* Dharmapuri District.

To study the changes in land use, to determine the factors which induce the changes and the potentials for future changes and to suggest land use plan involving cropping and livestock farming to accelerate the rate of agricultural development in the district to catch up with the growth rate in the State as a whole.

Field work for identifying the agricultural development problems, detailed study of selected villages to understand decision making processes and analysis of secondary and primary data to be done.

Commencement	June 1973
Completion	June 1978
Degree	Ph. D.

Sri Meenakshi Government College for Women, Madurai

83. *Micro level sample of rural* India—Survey of 16 villages, Madurai

Socio–economic survey of villages—an image of rural India.

By collection of *primary and second*–ary data, Correlation with tha existing economic factors *and report*.

Commencement	January 1977
Completion	March 1977
Degree	M. A.

84. Urban geography and Town Planning

Survey of a residential colony and a slum at Madras, Bangalore and Madurai.

To compare the nature of residential colony and slum in the three cities.

By *collection* of primary data using questionnaire and statistical analysis. The visits have revealed that the slum in Bangalore is in better condition through rehabilitation than at Madras and Madurai. Supply of water, electricity and educatio–nal facilities are still to be improved in the

slum areas, while the colonies show self-supporting tendency of limited capacity.

Commencement	2–3–1977
Completion	9–3–1977
Degree	M. A.

85. Morphometric analysis of Amaravathi Basin.

Considering a drainage basin as a unit, the characteristics of this area to be determined and analysed.

By inference from topographic sheets, field-work inference and application of statistical methods.

Commencement	July 1976
Completion	July 1976
Degree	Nil

86. Survey of Town Hall Road, Madurai.

To survey the shops and interview the consumers at Town Hall Road and survey the pedestrian density.

By questionnaire, primary data collection and statistical analysis.

Commencement	23–8–'76
Completion	23–8–'76
Degree	M.A.,

87. Geomorphology and Hydrology joints and weathering landforms at Tiruparankunram, Madurai.

To test the importance of joint control on weathering landforms over granite.

By field measurement, sketching, preparation of report and statistical analysis.

Commencement	18–9–1976
Completion	18–9–1976
Degree	BA/MA

HISTORY

Presidency College, Madras

88. Non-Brahmin Movement in Tamil Nadu from 1917 to 1937

The project aims to throw light under what circumstances this movement arose and its subsequent impact on the political development of South India.

Interview, questionnaire and study of literature etc to be applied for collection of data.

Commencement	1–4–1974
Completion	1–4–1978
Degree	Ph. D.

89. History of the Dalavoy Mudaliars

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, page S. 15.

90. Madras Presidency under Lord Pentland

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 15.

91. History of American Consulate

To trace the economic and social conditions in India as recorded by consulate service.

Commencement	1-1-1973
Completion	1-1-1978
Degree	M. Litt.

92. Saivism under the imperial Cholas (850-1300 A. D.)

To study the origin of Saivism and its development upto 850 A. D., comparing the progress under the imperial Cholas, contribution to art, religious toleration and relation with Saivites of other nations.

By literature and inscriptions

Commencement	1-4-1975
Completion	1-4-1979
Degree	Ph. D.

Annamalai University, Annamalai Nagar

93. The views of the Indian Parliament towards U.S.A—a study

To know the attitude of political parties towards the United States of America after Indian independence.

Descriptive method

Commencement	31-12-1969
Completion	31-12-1977
Degree	Ph. D.

94. Rise and fall of the French in the Carnatic.

To analyse the impact of the French on the Carnatic - Rise, Consolidation and Fall. This includes the political, economic as well as social impacts. The role of co-operative movement in the Carnatic which was due to French impact is also to be analysed.

Commencement	Oct. 1975
Completion	1980
Degree	Ph. D.

95. Chronology of the Sangam Rulers

To investigate the possible correct dates of the ancient Chera, Chola and Pandyas.

Descriptive method.

Commencement	7-10-1976
Completion	7-10-1981
Degree	Ph. D.

PSYCHOLOGY

Annamalai University, Annamalai, Nagar

96. Adjustment problems of the aged.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 18.

97. A study of the factors affecting the personal adjustments of college students.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 18.

98. Attitudes and adjustment problems of foreign nationals in India.

Reported in Bulletin, 1975, Vol. V, Nos. 5 & 6, Page S. 18.

99. A study of perception, body response and personality.

To investigate how an individual's personality traits influence his perception and body reaction.

By laboratory observation. After effects of movement, which originate from the cortex is the proposed material for perceptual stimuli. The body reactions like Galvanic Skin Resistance (GSR) pulse rate etc. are proposed to be measured. This study will attempt to correlate the perceptual after effect phenomena with Eysenck's model of personality.

Commencement	30–9–1976.
Completion	29–9–1981
Degree	Ph. D.

100. A psychological study of Consumers' behaviour towards super markets in Tamil Nadu.

Reported in Bulletin, 1975 Vol. V, Nos. 5 & 6, Page S. 18.

University of Madras

101. Cognitive styles in children

Reported in the Bulletin, 1976, Vol. V, Nos. 5 & 6, Page S. 18.

102. A study of psychological development of infants.

Reported in the Bulletin, 1975, Vol. V, Nos. 5 & 6, page S. 13.

103. Suggestibility and hysteria

To find out whether hysterics are more suggestible than normals and neurotics and what conditions favour suggestibility in hysterics.

By Primary suggestibility tests—Body Sway Secondary suggestibility tests-odour suggestion test, progressive weights, progressive line—brightness perception, motion perception and size perception of 100 hysterics, 100 normal and 100 mixed neurotics.

Commencement	July 1976
Completion	July 1979
Degree	Ph.D.

104. Persuation and anxiety.

To study which level of arousal in anxiety facilitates to maximum persuasion and the interaction of trait and state anxiety levels.

By factorial design using within subjective design.

Commencement	1–8–1974
Completion	31–7–1977
Degree	Ph.D

105. Cognitive style and need achievement.

To study the relationship between need achievement and the personality variable cognitive style.

Commencement	1–4–1976
Completion	—
Degree	Ph.D.

SOCIAL WORK

Madras School of Social Work

106. Evaluation study of the Government of India scheme for welfare of children in need of care and protection in Tamil Nadu.

To assess the pattern of outlay of funds by the Government of India for the programme, assess how far the objectives have been achieved, evaluate the operational aspects, evaluate the standards maintained by the agencies, study the difficulties experienced and offer suggestions.

Commencement	1-8-1976
Completion	31-1-1977
Degree	Nil.

Sponsored by the Social Welfare Department, Government of India

SOCIOLOGY

Directorate of Census Operations, Tamil Nadu and Pondicherry

07. Intensive study of selected towns—18 in Tamil Nadu and one in Pondicherry.

To study the growth of towns in the context of transformation of the rural societies of Tamil Nadu. It aims to get an insight into the growth history of the town, frequency and pattern of interaction among different segments of population, its linkage with rural hinterland and persistence and changes in values in modern set up etc.

Both normative and statistical approaches are made. Field data canvassed in different formats of household schedule, institution schedule, commercial and industrial establishment schedule etc, besides group discussions and use of literature. Undertaken in a phased manner. Seven towns already studied.

Commencement	1973
Completion	1979
Degree	Nil.

108. Re—study of villages—four in Tamil Nadu and two in Pondicherry

To gain insight into the parameter of socio-economic structure of the villages and the dynamics of emergence, persistence and change of the various elements of structure through the interplay of various psycho-social, techno-economic and political forces by micro-study.

Field data collected by different formats of household schedules and village schedules, besides group discussions and use of literature. Phased study. Two villages already studied.

Commencement	1973
Completion	—
Degree	Nil.

HOME SCIENCE

Gandhigram Rural Institute, Gandhigram

109. Action - research project on nutritional deficiencies among pre-school children in a rural community-Chatrapatti village, Madurai District.

To detect the prevalence and extent of malnutrition among the children 0-5 years in the village, to identify the major factors responsible for malnutrition and to prepare a suitable action programme for correcting the deficiency.

Data were collected on the basis of a socio-economic cum-diet survey

covering family background and the dietary pattern and a health survey covering anthropometric clinical and laboratory examinations.

Commencement	June 1976
Completion	Jan. 1978
Degree	Nil.

Sri Avinashilingam Home Science College for Women, Coimbatore

110. Nutritional profile of well-to-do children of 5-10 years in Coimbatore.

To develop local reference standards of height, weight, arm circumference and triceps skinfold measurements for children of 5 to 10 years for Tamil Nadu.

By a study of sample of 1,509 children (697 boys and 812 girls) with monthly per capita income of Rs. 200/- and above.

The results revealed (i) height and weight had a high positive correlation with each other, (ii) boys were heavier and taller than girls till the 9th year, but in the 10th year girls were taller than boys indicating their prepubescent period (iii) the mid upper arm circumference of boys was greater than girls etc.

Commencement	July 1975
Completion	April 1976
Degree	M.Sc.,

111. Nutrition and growth profile of well-to-do children of 0-60 months of age.

To set the local reference standards with special reference to the physical measurements of children below 60 months of age.

A sample of 1,102 children (623 boys and 479 girls) was drawn from 10 nursery schools, 3 paediatric and one maternity clinic and their family back ground studied. Height, weight, head, chest and mid arm circumference and tricep skinfold measurements were recorded and clinical assessment made.

The results revealed correlation between height and weight was highest a positive correlation was found between height and mid upper arm circumference and weight and mid arm circumference. A significant correlation was found between parents' height and children's height, but no correlation in weights.

Commencement	July 1975
Completion	April 1976
Degree	M. Sc.

112. Nutrition education for rural mothers.

To find out the feasibility of organising an intensive nutrition education programme for rural mothers belonging to low income groups to enable them to make better use of locally available nutritional foods and develop proper food habits and beliefs.

30 women who were either pregnant or had a child below 36 months were selected from the village Agraharasamakulam from Sarkar Samakulam block of Coimbatore district. Background information was collected through survey. Discussions and demonstrations were the main methods, followed by audio-visual aids.

The results revealed that the changes in the beliefs of the sample subjects showed a favourable shift towards using better nutrition oriented foods.

Commencement	July 1975
Completion	April 1976
Degree	M. Sc.

113. Organising parent education *programmes in rural balwadies.*

To establish sound parent teacher association through various programmes and give non-formal education on *nutrition, health and family planning* to the parents.

In the balwadi of the village Kottaipalayam in Sarkar Samakulam a parent-teacher association was established and programmes on nutrition, family planning, adult education etc are conducted. A school lunch-kitchen, a milk co-operative and a fair price shop are run by the association.

The programme will be evaluated.

Commencement	May 1976
Completion	April 1977
Degree	M. Sc.

114. Initiating non-formal education programmes in Mahalir Manrums

To initiate non-formal education programmes, mobilise local leadership, develop community assets and subsidiary occupations to improve the economic status.

About 100 Mahalir Manrams registered under Bharathiya Grameen Mahila Sangh were mobilised and oriented for programmes of functional literacy, kitchen gardens, preparation of cakes and biscuits etc. A save grain campaign was organised for 50 farm women from 10 villages of Perur and Sarkar Samakulam. The activities will be evaluated.

Commencement	May 1976
Completion	April 1977
Degree	M. Sc.

115. Developing school community relationships

To strengthen school community relationship through organising various programmes of school lunch kitchen, urinals and school garden to make the community aware of their role and the responsibility of the school towards upliftment of the community.

Programmes were conducted in two villages namely Kottaipalayam and Vellamadai in which the link between the community and school is strengthened by conducting festivals and functions, initiating a school lunch kitchen etc.

The programme will be evaluated.

Commencement	May 1976
Completion	April 1977
Degree	—

116. Developing leadership in Harijan colony.

In this action research the Harijan families of Gandhinagar, Perur Panchayat Union, was chosen in which a great impact is evinced through disbursement of cattle and sheep loans, initiating balwadi, starting co-operatives and

mobilising them to take leadership in improving the socio-economic conditions.

Commencement	May 1976
Completion	April 1977
Degree	M. Sc.

117. Initiating subsidiary occupations in selected villages.

To provide loan facilities through the Canara Bank to initiate subsidiary occupation and improve the economic status of the people.

In Kottaipalayam, Vellamadai and Agraharasamakulam villages, individuals were provided with loans from the Canara Bank to start dairy, sheep rearing, tailoring etc. The improvement in economy will be assessed through the increase in real income and standard of living.

Commencement	May 1976
Completion	April 1977
Degree	M. Sc.

118. Organising Balwadi in a Harijan Colony.

To educate the children and parents on health, hygiene, nutrition, family planning and savings.

Gandhinagar, the Harijan Colony in Perur Panchayat Union was chosen for study and a balwadi established with a teacher paid by the parents–

Commencement	May 1976
Completion	April 1977
Degree	M. Sc.,

119. Impact of training programmes for Mahalir Manrams.

To evaluate the efficacy of the training programmes conducted by the ANP instructresses to Mahalir Manram conveners.

The A N P instructresses at Sri Avinashilingam Home Science College will be conducting training for Mahalir Manram Conveners. To evaluate the efficacy of the training programme, the survey was taken by administering questionnaires to the trainees before and and after training.

Commencement	May 1976
Completion	April 1977
Degree	M. Sc.,

120. Initiating young girls clubs for leadership development in rural areas.

To develop leadership qualities in young girls and to start new economic programmes like a milk co-operative market and consumer co-operative stores.

The villages chosen are Kottaipalayam and Vellamadai where the members have started a milk co-operative and consumer co-operative.

Commencement	May 1974
Completion	April 1977
Degree	M. Sc.

121. Extent of use of cowdung gas as household fuel in Coimbatore District.

To find out the extent of use of cow dung gas as a household fuel and the utility of the gas in hostel kitchens.

A survey was conducted in selected households in Coimbatore District where cow dung gas plants have been installed and also from hostel kitchens. Ninety per

cent of the sample surveyed had financial help from the Khadi and Village Industries Commission. Economy and efficiency and absence of smoke were some of the advantages.

Commencement January 1975
Completion February 1976
Degree M. Sc.

122. Impact of parturition and puerperium on home management.

To find out the extent of home managerial problems faced during the absence of the homemaker, the usual sources of help which are availed of during this period and the consumer demand for home help scheme.

Survey method using interview schedule was used to collect information from 200 home makers in puerperal stage, in both urban and rural set up equally.

Home management problems were significant in areas such as meal preparation, care of children, household cleaning, fetching water etc. 53 per cent of the home makers accepted the home help scheme.

Commencement January 1975
Completion February 1976
Degree M. Sc.

123. Selected slum rehabilitation Centre.

To find out the socio-economic status of the households in the selected rehabilitation centre, to give education on health and hygiene, to conduct action programmes on the felt needs of the members and to evaluate the receptivity of the ideas among the families.

One of the eight rehabilitation centres in the city of Coimbatore was selected. By interview method basic information about the sixty-six house-holds was collected. Fifty interested households were selected for conducting education programme, including personal hygiene, sanitation, disease control etc. It was found that, health education is a dire necessity in the slums prior to housing them in new tenements.

Commencement January 1975
Completion February 1976
Degree M.Sc.,

124. A study of the generation gap in relation to selected values in rural area.

The objective was to find out whether the generation gap exists in rural areas. If so, how far the youth in villages differ in their attitudes and values from their parents and in what aspects they differ.

The method adopted for study was Lickerts Five Point Scale as the attitude questionnaire, administered to 50 each of adolescent boys and girls and the 100 parents interviewed. The differences were not significant in religion, caste and political values. There was a slight difference in social and moral values.

Commencement July 1975
Completion March '76
Degree M.Sc.,

125. Organisation and evaluation of a preschool teachers training programme.

The objective was to assess the qualities of untrained preschool teachers and to organise a comprehensive training programme for the untrained teachers and assess its effectiveness.

The study consisted of three steps—planning, preparation for the training programme and evaluation. An interview schedule was used to collect information from the untrained teachers, rating sheet was used to see the personal qualities and observation method used to find out effectiveness of the programme. The results revealed that the scores obtained by the teachers for their personal qualities and managerial abilities after the training were much better.

Commencement	July 1975
Completion	March 1976
Degree	M.Sc.,

126. Growth pattern of adolescent girls—post menarche.

To find out the anthropometric measurements of the adolescent girls (post menarche) and compare it with the available norms. To obtain a measure of the food intake and the nutritional deficiency, to see the relationship between socio-economic variables to the growth pattern, study the normal growth and development of Indian girls and test the haemoglobin level of the adolescent girls.

650 girls of 11–17 years in the 6th to 11th standards in 11 schools selected for the study, using questionnaire, anthropometric measurements, clinical examinations etc.

The major findings were that mean height and weight increased with age and as the income increased; among the cultural groups Malayalies were heaviest and tallest, majority had normal haemoglobin level etc.

Commencement	July 1975
Completion	April 1976
Degree	M.Sc.,

127. Factors influencing creativity among school pupils.

259 pupils of both sexes from VI to X were chosen from an English Medium school in Coimbatore and the Wallach and Kugan creativity instrument was administered.

The conclusions are that educational levels of pupils have significant effect on their visual and verbal creativity. The impact of age and educational levels of pupils have significant effect with regard to parents educational level, economic status and occupation.

Commencement	July 1975
Completion	April 1976
Degree	M.Sc.,

128. Growth pattern of adolescent girls belonging to high income group—post menarche.

To evalute the growth pattern of adolescent girls in relation to their dietary and nutritional status.

600 adolescent girls of 11–15 years in high income group were selected. Data collected by socio-economic survey, nutritional anthropometry, clinical examination etc.

The study revealed that income increased the nutritional status, majority were free from nutritional deficiency, the anthropometric measurements were higher than all India standards etc.

Commencement	July 1975
Completion	April 1976
Degree	M.Sc.,

129. Growth pattern of rural adolescent girls – post menarche

To evaluate the growth pattern and nutritional status of rural adolescent girls.

600 adolescent girls of 11–17 years from rural areas were selected. Nutritional anthropometry, clinical examination and food consumption survey by recall method were undertaken.

It was found that the velocity of growth in height was maximum at the age of 11–13½ years and minimum at 13½ to 17 years and the velocity of growth in weight was maximum 11–13 years and slow at 13 to 17 years.

Commencement	July	1975
Completion	April	1976
Degree	M.Sc.	

130. A comparative study of the metals abilities of urban and rural pre-school children.

A test on mental ability, based on Thurston's primary mental abilities, was administered to 200 urban and 200 rural children between 4 to 5 years.

The results showed that urban children are superior to rural children in mental abilities namely verbal ability, information and comprehension, memory and spatial relations.

Commencement	July	1975
Completion	April	1976
Degree	M.Sc.,	

131. Impact of mother's education on child rearing practices.

50 mothers from each educational category illiterate, primary and secondary school and college education selected. Interview schedule used to ascertain two aspects viz. family background and different aspects of child rearing practices.

Commencement	July 1975
Completion	March 1976
Degree	M.Sc.,

132. A study of texture, colour and design preferences in clothing of selected women at Kottayam District.

To find out the interests and aspirations of older women in personal clothing selection in Kottayam.

A study was conducted in 200 families using the interview schedule.

Commencement	June	1975
Completion	April	1976
Degree	M. Sc.	

133. Controls in anticrease finishes—an attempt to improve resin formulas and establish improvement in properties of fabrics.

White cotton was subjected to resin baths, processing, visual examination and selected laboratory tests

Commencement	June	1975
Completion	April	1976
Degree	M. Sc.	

134. A wear study of coloured silk using selected detergents in hard water.

An attempt to find out the most effective synthetic detergent to be used in hard water for laundering coloured silks.

Four commercial detergents were selected for the study and they were evaluated for their efficiency by conducting a wear study on coloured silks.

Commencement	June 1975
Completion	April 1976
Degree	M. Sc.

135. Performance of controlled cloth produced by different mills.

To study the awareness of controlled cloth among consumers and to compare the quality of controlled cloth produced by different mills, by survey and experimental methods.

Commencement	June 1975
Completion	April 1976
Degree	M. Sc.

136. A comparative study of mill woven and hand woven polyester cotton sarees.

A wear study was conducted with the two types of fabrics and they were evaluated by visual inspection and laboratory tests.

Commencement	June 1975
Completion	April 1976
Degree	M. Sc.,

137. Stitching as a means of increasing family income

To find out the serving practices of homemakers and to determine the extent to which the family clothing budget could be stretched by such practices.

Commencement	June 1975
Completion	April 1976
Degree	M. Sc.,

DEMOGRAPHY

Indian Institute of Technology, Madras.

138. Redistribution of population— means to attain equi-fertility rate and Public investment and mortality control

First project. The rural - urban differential rate of fertility and the rural to urban migration with the unique feature of concentration of immigration straight to metropolitan areas are evident. The study explores the possibility and necessity of redistributing the population, not only to make the migration more effective but also to equalise the fertility rate as natural evolution.

Differential fertility rates of rural and urban are calculated. A simulation model is calculated distributing the population at various ratio till the population acquire the urban fertility.

139. II Project:

It is often claimed that of all investments, investments on Public Health direct output of either expanding the span of life or improving the expectancy of life at birth or averting deaths.

The method relates the Public Health investments to better living conditions, nutrition and preventive and other health care. Mortality levels by age and sex and cause of death are analysed and related to changes in mortality of different time series and with averted and life tables calculated.

OTHERS

Indian Institute of Technology, Madras

140. Biosynthesis and dynamic simulation of higher order multi-loop non-linear human societal control system using continuous system modelling programe.

To find the measures to be taken presently, and in future (50 years) to reduce the population to a stabilized level and the policies and the best course of action to be followed to meet the needs of the above population in the next 50 years.

The methodology used is the systems dynamics approach developed by J. W. Farrester.

Commencement	Aug. 1973
Completion	Dec. 1977
Degree	Ph.D.

(Biomedical Engineering)

141. Modelling of Socio-economic systems.

To develop a model for the national energy system and simulate it for various conditions. To optimise the plan investment to get maximum employment, with rural industries sector aided in our plans.

Both these are being simulated using the IBM 3701155 computer systems and using mathematical programming techniques.

Commencement	Jan. 1977
Completion	—
Degree	B.Tech.

MADRAS INSTITUTE OF DEVELOPMENT STUDIES: PUBLICATIONS

publishers: (from whom copies may be ordered)
M/s. Sangam Publishers,
11, Sunkurama Chetty Street,
Madras-600 001.

I. Books Published:

1. Income Earning Trends and Social Status of the Harijan Community in Tamil Nadu
   By A. Vagiswari (Price Rs. 12/-) Demy 8VO
2. Economics of Dry Farming in Tamil Nadu
   By R. K. Sampath and Jayalaxmi Ganesan
   (Price Rs. 15/-) Demy 8VO
3. Nutrition in Tamil Nadu
   By Rajammal P. Devadas (Price Rs. 15/-) Demy 8VO
4. A Guide to Research in Economics
   Edited by C. T. Kurien (Price Rs. 30/-) Demy 8VO
5. Land Reform in Tamil Nadu
   By G. Venkataramani (Price Rs. 15/-) Demy 8VO
6. Techniques of Perspective Planning
   Edited by Malcolm S. Adiseshiah (Price Rs. 15/-) Crown Quarto
7. Plan Implementation—Problems and Prospects of the Fifth Plan
   Edited by Malcolm S. Adiseshiah. (Price Rs. 9-40) Crown Quarto
   (Items 6 and 7 are a joint MIDS and ITES enterprise published by Tamil Nadu Government Press from whom they can be purchased)
8. Poverty and Wage Goods Supply in Tamil Nadu
   By M. Ramamurthy (Price Rs. 20/–) Demy 8VO
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   By K. G. Rama (Price Rs. 10/-) Demy 8VO
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    By G. Venkataramani (Price Rs. 20/- Demy 8VO
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    By Barbara Hariss
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III Future Publications:

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    By Alexander Joshua
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    By M. Srinivasan

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The institute founded and run by Dr. Malcolm S. Adiseshiah is a charitable trust registered under the Madras Charitable Trusts Act.

The aim of the Institute is to contribute to the economic and social development in Tamil Nadu and India.

The activities of the Institute are:

—Studies and action-oriented research in micro-development problems;

—Documentation and library service in development programmes;

—Exchange and dialogue at the State, National and International levels on development issues;

—Publication of papers and research results of the Institute.

Printed by Aslami Printers, Arunachalapuram, Adyar, Madras-600 020.
Editor: Dr. Malcolm S. Adiseshiah.